SECTION 8

SITE SECURITY

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Letter from President Franklin D. Roosevelt to Lieutenant General Leslie R. Groves, commander of the Manhattan Project, June 29, 1943: ***"I am writing to you as the one who has charge of all the development and manufacturing aspects of this work [referring to the Manhattan Project]. I know that there are several groups of scientists working under your direction on various phases of the program. The fact that the outcome of their labors is of such great significance to the nation requires that this project be even more drastically guarded than other highly secret war development. As you know, I have therefore given directions that every precaution be taken to insure [sic] the security of your project."*** **-**
UPOA 1977, bk. 1, vol. 14, app. A-1

The purpose of security at the Hanford Site during the Manhattan Project was to prevent others from learning how to create an atomic bomb by "provid[ing] the secrecy and protection necessary to prevent all possible espionage, sabotage, damage, interference or other harmful effects which might endanger the successful completion of the Program" (UPOA 1977b, bk. 1, vol. 14, p.1.2). Throughout the Cold War, the purpose of the Safeguards and Security Program (as it was then called then) was to ensure "that appropriate protection is provided for government property and equipment to prevent the loss of classified information, and to prevent the loss, theft, diversion, or sabotage of SNM [special nuclear materials]" (DOE 1990 p.8-5).

As the first contractor at the Hanford Site, E.I. Du Pont de Nemours and Company (Du Pont) conceived and developed the security measures for the Manhattan Project. These measures were modified over the years in reaction to world events, increased knowledge of security, and subcontracting changes in the 1960s. The Atomic Energy Acts of 1946 and 1954, for instance, were pivotal in determining how information and materials were to be handled in relation to national security. In the background of all security measures was the need for secrecy during the Manhattan Project and the need to guard classified information during the Cold War.

The main security organization at the Hanford Site has been the Hanford Site Patrol from 1943 to the present with support from other organizations. Since the earliest days of the Manhattan Project, the Hanford Site Patrol has been the watchdog monitoring access to the Hanford Site. The major organizations teaming with the Hanford Site Patrol were the U.S. Army Corps of Engineers (1943-1947) and the Federal Bureau of Investigation (1943-present).

Security regulations established during the Manhattan Project contributed to the Hanford Site culture. Employees were surrounded daily in one way or another by aspects of security. They passed security slogan billboards on their daily ride to work. They presented their security identification badges to Hanford Site Patrol officers wherever they went. They had their personal belongings searched. They knew nothing about their work except what was necessary for their immediate assignment. They had to follow strict regulations regarding classified information and its accessibility. They had to be careful about what they discussed at work and at home. This was the environment employees accepted as part of life while living in a government town and working at the Hanford Site, and it continued to be part of the Hanford culture throughout the Cold War. With the change in mission, regulations have decreased, resulting in security becoming a less restrictive aspect of working at the Hanford Site.

Although less restrictive from an employee viewpoint, many of the security measures of the Cold War are still in practice today. Because numerous sources dealing with security issues at the Hanford Site are still classified, information about

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Divider Page Photo: Guard Tower, ca 1945 (Du Pont 1945a)

site security during the Cold War could not be fully developed in this section. For instance, it was very difficult to obtain any information concerning the practices of the Federal Bureau of Investigation at the Hanford Site.

HISTORICAL ELASTICITY

The security measures undertaken were numerous: background investigations of new employees, security education and information programs, classified areas and documents, security safeguards, and emergency preparedness. Each of these measures has required elasticity, stretching to support increased security needs and contracting when those needs no longer existed. Increased security needs that stretched the system were mainly caused by unexpected events or changes in the Hanford Site mission, funding, and international affairs.

One such unexpected event that stretched the security system during the Manhattan Project occurred when Japanese balloons, carrying incendiary and fragmentation bombs, appeared over the Hanford Site in 1945. Hanford security was put on alert and reinforcements from the Pasco Naval base were dispatched as backup to help intercept the balloons. Although security was not breached, the event did impact plant operations. One balloon, entangled with a transmission line of the Grand Coulee and Bonneville generating stations, caused a power surge on the lines connected to the reactors. Power to the reactors was knocked out only briefly because the automatic backup system temporarily restored power (Jones 1985, Sanger 1995).

Elasticity again came into play at the end of World War II. Secrecy was no longer as important as protecting classified information and nuclear materials. Increased attention was given to "strengthen[ing] security control from a physical and internal standpoint. This was accomplished gradually, and with a minimum of publicity by redistribution and augmentation of the exterior guard forces, higher clearance standards for old and new employees, a strict publicity control, and other similar measures based upon the principle of safeguarding that which the Project is known to possess" (UPOA 1977b, bk. 4, vol. 6, p. 11.1).

The elasticity of the security system was especially flexed when the Korean War started in 1950. Air patrolling increased to 24 hours per day (Rokkan 1997), and military troops were brought to the Hanford Site for protection against the threat of attack on the facilities. The U.S. Army established Camp Hanford and a network of anti-aircraft artillery and Nike missile sites. A description of these installations can be found in Section 9, Military Operations.

With the end of the Korean War, some security measures were relaxed (Ogletree 1977, Rokkan 1997). Routine air patrolling ended in 1964. The Hanford Site's main roads were opened for family and guest tours in 1967. The double badge system was replaced with a single badge indicating all pertinent access and clearance authorizations. Personnel and vehicle searches became less common. The Columbia River was opened to the public from the 300 Area to Ringold. However, the channel and the shoreline between the 300 Area and the island east of the area remained off limits. M-8 light-armored cars, vehicle rovers, and manned fence towers were no longer used.

The threat of international terrorism in the aftermath of the 1972 Olympic Games in Munich again triggered increased security. During this time, the Hanford Site Patrol increased its vigilance over all the major production areas. Officers patrolled the 300 and 400 Areas 24 hours a day and increased surveillance at the 100 Area river pump houses and the 200 Area tank farms. Detex clocks were installed at the Fast Flux Test Facility. Patrol officers used them to clock in at each of the locations in the Fast Flux Test Facility where they patrolled. "Razor wire fencing was installed, and several more patrol officers were assigned to guard the nuclear material (Ogletree 1977). The Hanford Site Patrol organized a Tactical Response Team in 1977 to better combat terrorism. Members of the Tactical Response Team were specially trained patrol officers with additional skills in special weapons, counter-terrorist tactics, crowd control, aerial surveillance, and forced entry (Thielman 1995).

During the late 1970s and into the 1980s, security measures were increased and upgraded at the PUREX Plant (although measures were appropriately reduced while it was not operating between 1972-1983), the Plutonium Finishing Plant, and the 100 N Reactor, which were the main operating plants at the time. Extra security fences with detection and alarm systems were constructed around the operation areas, and all personal possessions were searched at security checkpoints when anyone entered and left these areas. At the N Reactor, for example, several structures were added, such as rooftop guardhouses, river guard towers (see the Historic Property Inventory Form for the 181-NA Pump House Guard Tower in Appendix B on the Internet), and pill boxes in the hallways of the reactor building that armed security guards used for cover to watch for suspicious activity (DOE 1997a) (see Figure 2-8.1).

Figure 2-8.1. *Pill Box Used for Security Surveillance in the Hallway of the 100-N Reactor, 1986*

While certain measures were taken to increase security against terrorism, other security measures were relaxed in the 1970s and 1980s (Cadd 1998, DOE 1994c, Thielman 1995, Rokkan 1997). The entire stretch of the Columbia River through the Hanford Site was officially opened to the public in 1979 after being restricted since 1943. Air restriction over Hanford was modified to allow for more open air space. Magnetic cards were used to access buildings, which reduced the need for security personnel. The number of protected areas requiring high security was reduced when the 209-E Critical Mass Laboratory was closed and N Reactor and PUREX were placed on cold stand-by status in 1988 and 1990, respectively. The Hanford Site implemented the island concept in which only three areas were designated as highly protected areas: the Plutonium Finishing Plant, the Fast Flux Text Facility, and the K Basins.

Another area calling for elasticity concerned trespassers who, either innocently or maliciously, entered the Hanford Site. When innocent motorists, sightseers, photographers, and boaters unknowingly wandered onto the Hanford Site, the Hanford Patrol simply turned them around. Malicious trespassing was rare. These infractions included escaped criminals crashing through a barricade, poachers entering the Hanford Site from the Columbia River or on Rattlesnake Mountain to hunt, and pot hunters trespassing on the shoreline and islands to search for archaeological artifacts. In malicious trespassing cases, the Benton County Sheriff's Office or the Hanford Site Patrol issued citations or made arrests.

In the mid-1980s, on the day set aside to commemorate the bombing of Japan, demonstrators protested Hanford's continuing role in the creation of nuclear defense weapons. Some protestors were arrested for trespassing and inhibiting traffic (Curtis 1999). This demonstration, followed by the demise of the Cold War, signaled the change in the Hanford Site mission. With the mission changing from nuclear material production to environmental cleanup, it became apparent that the Safeguards and Security Program would need to be reevaluated. In May 1990, a team of contractor staff evaluated security and "discuss[ed] the proposed transition from a defense security posture to an industrial posture, with additional protection for remaining nuclear materials and classified information" and initiated the Security Transition Program at the Hanford Site (Thielman 1995, p.9).

This team gave way to a multi-contractor team led by the U.S. Department of Energy (DOE) that identified and implemented areas of change, such as consolidating materials in conjunction with consolidated security areas, reducing clearances, simplifying access to the Hanford Site, and using automation and technological security devices where

possible (DOE 1994c, Thielman 1995). DOE saved time and money by drastically reducing the number of high level security clearances called Q and L (those already issued and to be issued) beginning July 1990. Other changes resulting from this effort were the closing of the 300 Area protected areas, consolidating materials requiring security measures, closing of most badge houses, and turning law enforcement over to the Benton County Sheriff's office (DOE 1994c, Thielman 1995) – all reflecting the elasticity that has been the mainstay of security at the Hanford Site.

ROLE OF SECRECY

The story of security at the Hanford Site involves the concept of secrecy, especially during the Manhattan Project when the United States was trying to develop nuclear weapons to end World War II. The shroud of secrecy played a major role in the daily lives of Hanford Site employees. Hanford Site employees were told little to nothing about the project on which they were working. They were told only that their work at the Hanford Site was going to help the United States win the war. Thus, secrecy and efficiency in their work was essential. Even the Selective Service, who deferred those working at the Hanford Site from military service, knew only that the Manhattan Project was related to a wartime effort (Van Arsdol 1992).

> ***"If the [Manhattan] Project was to be successful it was necessary to afford it maximum protection and to cloak it in the utmost secrecy. There were strong indications that the German government had already embarked upon a similar program. It was apparent that the successful completion of the American Project prior to the German might decide the course of the war and be a dominant factor in the post-war peace…It was to be expected that once the enemies of the United States learned of the Project, they would try every means within their power to sabotage it. The absolute necessity, then, of keeping all classified information concerning the Project from the enemy and of taking every precaution to secure it from attempts at sabotage was obvious."*** **- UPOA 1977b, bk. 1, vol. 14, p.1.1**

To keep employee spirits high while not knowing the Hanford Site's purpose, Colonel Franklin T. Matthias, one of Lieutenant General Groves' top assistants, attempted to boost morale in a speech made in 1944 to Hanford Site workers. One worker recalls:

> *"Thousands came. He wanted to get it across to everybody how important it was. Some people didn't seem as dedicated as they could have been. He made a pretty good speech. It gave us all a shot in the arm. When we left there we were ready to build a plant. He did say that it was impossible to tell us what we were doing because the enemy would like to know. We were not allowed, he said, to discuss it with each other, just like our foreman had told us. But he said I can tell you this much, that it's important and the enemy, Germany, is attempting to do the same thing we are, to build a plant like this. And whoever gets there first will win the war. And that was enough said. We didn't ask any further questions."* - Sanger 1995, p. 91

> **Before the mission of the Manhattan Project was publicly released, *"workers largely depended upon the word of the Army that secrecy was important, and the explanation had to be clearly made to them that, although they had no knowledge of the actual purpose of the [Manhattan] Project, they nevertheless had important information, through their knowledge of types of equipment used, materials handled, size of buildings, and number of people on the job. Grounds for protecting information were largely patriotism, loyalty to the fighting men, and the reasoning that the less publicity given the Project, the more difficult it would be for the enemy to acquire information about it and also, the greater would be the element of surprise."* - UPOA 1977b, bk. 1, vol. 14, p. 6.13**

Although prohibited from doing so, employees and Richland Village residents speculated about what was being produced at the Hanford Site since so little information was available to them. Some humorous theories included Pepsi-Cola, Kleenex, clothespins, fourth-term Roosevelt campaign buttons, and sandpaper – relating to the local dust storms and the abundance of sand. Other more serious theories included poison or nerve gas and solid rocket fuel to compete with the Germans (Sanger 1995, Loeb 1982). "All rumors regarding

the purpose of the [Manhattan] Project, health hazards, or other rumors which might create unrest among the personnel were promptly traced to their source and disciplinary action was taken in the form of termination or reprimand" (UPOA 1977b, bk. 4, vol. 1, p. 6.2).

It has been reported that even the U.S. Army Corps of Engineers (as Matthias has said) "rigged up a cover story right at the beginning… We ended up calling Hanford a place to make RDX [a new explosive]. Nobody questioned it. Du Pont was known as an explosives maker" (Sanger 1995, p. 79). The objective was to try to keep people from speculating about the Hanford Site.

DECLARATION OF SECRECY

To keep people from talking, each employee received a security orientation in which they signed a Declaration of Secrecy form. They signed this form again when terminating their employment. In signing the form, the employee took a pledge of faith and allegiance to the United States, agreed not to disclose any classified information or materials to unauthorized individuals or to misuse the material, and understood that violation of the National Espionage Act or the Federal Sabotage Act was punishable by up to 10 years in prison or up to $10,000 in fines (UPOA 1977b). Information not to be disclosed to others included "references to the mission of the [Manhattan] Project, the size, scope, or nature of its operations, general problems worked on, materials and equipment used in restricted areas, connection and relationship to each other and to the [Manhattan Engineering] District of various projects and laboratories throughout the country, and professions or former connections of principal technical personnel" (UPOA 1977b, bk. 1, vol. 14, p. 6.12). Since1988, Hanford Site employees obtaining security clearances agree to and sign the Classified Information Nondisclosure Agreement, Standard Form 312, which serves the same general purpose as the original form.

COMPARTMENTALIZATION

> ***"Compartmentalization of knowledge, to me, was the very heart of security. My rule was simple and not capable of misinterpretation—each man should know everything he needed to know to do his job and nothing else. Adherence to this rule not only provided an adequate measure of security, but it greatly improved over-all efficiency by making our people stick to their knitting. And it made it quite clear to all concerned that the project existed to produce a specific end product – not to enable individuals to satisfy their curiosity and to increase their scientific knowledge."*** **- Groves 1983, p. 140**

The main way to stop information leaks at the Hanford Site was to limit the knowledge of each employee. This was called "compartmentalization of knowledge." *A Guide to Manhattan Project: The Official History and Documents* (UPOA 1977b, bk. 1, vol. 14, app. B-7, p. 4) states that "to minimize risk or compromise, employees of the [Manhattan] Project shall be organized into small working groups or teams so far as possible, each working on its own phase of the job and not being permitted to inspect or discuss the work being done by others." Therefore, the amount of information one person or group of persons obtained was limited. Employees were directed to focus only on their specific task and refrain from asking questions and unnecessarily discussing their jobs with fellow employees and even spouses or friends. Only a select group of employees knew the goal of the Manhattan Project (Loeb 1982, p. 26).

Compartmentalization was practiced in other areas of the Manhattan Project as well. The Corps required "equipment orders to commercial firms specify that an item not be manufactured and assembled at the same location. And when the production plants reached the point of start-up operations, plant managers received instructions to split up orders for raw materials among a number of suppliers so that the purpose for which they were being used could not be readily ascertained" (Jones 1985, p.269). In addition, blueprints were "broken down and distributed in such a way as to reveal as little as possible to any one individual about the overall character of the project" (Jones 1985, p.269). General construction specifications had to be relayed to the workers through hand-drawn sketches since only specific people had clearance to view official drawings (Sanger 1995).

The concept of compartmentalization, later commonly called "the need to know," continued through the end of the Manhattan Project and into the Cold War era. However, during the Cold War, compartmentalization was not focused on the creation of the bomb (by then a known fact), but on general national security and business sensitive information and activities.

CRITICS OF SECRECY

Some found the strict security regulations to be oppressive and excessive during the Manhattan Project. Because background investigations had to be so comprehensive they "result[ed] in delays in employment and hinder[ed] the already overworked recruitment drive" (Hageman 1945, p.73). "These security requirements, probably more than any other single subject, were a determining factor affecting practically every phase of the work performed under contracts supervised by the Manhattan District of the Corps of Engineers, and in many instances delayed, or increased the difficulty of, the work" (Du Pont 1945c, p.36).

Compartmentalization was a particular nuisance to scientists. Many felt that the restriction prohibiting them from exchanging data and discussing the Manhattan Project kept the technology from developing faster, thus causing "extended delays in achievement of scientific and technical objectives of the program". This was the view of Leo Szilard, a Manhattan Project scientist. He stated in 1946, "compartmentalization of information was the cause for failure to realize that light uranium [uranium-235] might be produced in quantities sufficient to make atomic bombs. We could have had it eighteen months earlier. We did not put two and two together because the two two's [sic] were in a different compartment" (Jones 1985, p.270). Others have commented that compartmentalization:

- "*puts you in the position of trying to do an extremely difficult job with three hands tied behind your back*" – 1943, Edward Condon, a physicist (Jones 1985, p. 271)
- "*resulted in a general loss of efficiency, required more supervision to obtain proper coordination, and, despite all attempts to counteract it, lowered morale and caused delays*" - Du Pont 1945c, p.38
- "*made it difficult to adequately impress workers with the importance and urgency of the project*" - Hageman 1945, p. 73
- resulted in "*bearing the seeds of unfortunate mistakes, duplication of research and ridiculous exaggerations. Inevitably, in some cases, scientists might waste time and effort solving a problem that had already been solved in another laboratory. They did not know it, however, because they had not been permitted to exchange information*" - Groueff 1967, p.43

Although, to take another look at it, Paul Loeb points out in his book *Nuclear Culture: Living and Working in the World's Largest Atomic Complex*:

> "*But if the security rules were frustrating, they removed from most Hanford workers the burden of judging the wisdom of what they were creating. Simply assuming that their efforts were necessary to win the war, they could immerse themselves in details. No one considered until much later (after the Hanford mission was revealed and the war was won) what other choices might have been possible. They knew only that their labors had brought to a close the war.*" - Loeb 1982, p.26

BREACHES IN SECRECY

Although no security breaches are known to have occurred at the Hanford Site, the need for security intensified when it was thought security had been breached at the Radiation Laboratory of the University of California, Berkeley (Jones 1985, p. 263). Secret information was allegedly leaked from the Radiation Laboratory by Communist sympathizers working there in 1942. This activity seemed to have been funded by a "high official in the Soviet embassy in Washington [D.C.]" (Jones 1985, p. 264). In 1943, counter-intelligence agents discovered this breach in security. Employees found to be connected to the leaks were discharged or transferred to non-sensitive assignments. The counter-intelligence agents discovered and ended continued Soviet Union espionage activities at the Radiation Laboratory, Metallurgical Laboratory, and the Los Alamos Laboratory but not before crucial secret information about the reactor process, chemicals, and technical knowledge of the bomb reportedly had been leaked to Soviet agents (Jones 1985).

No specific espionage cases were identified at the Hanford Site. However, the Soviet Union's first plutonium production reactor built in 1948, called F-1, appears to be almost an exact copy of the Hanford Site's 305 Building Test Reactor built in 1943. Measurements of both were very similar in relation to power, uranium rod spacing, rod diameter, and amount of uranium in the reactors. Both reactors were constructed to evaluate the purity of graphite and uranium. The fact that the design details of the Hanford Site reactor were not released until after 1955, at least 7 years after the Soviet Union completed its reactor, adds to the notion of espionage although this remains unsubstantiated (Libby 1979, Rhodes 1995).

> ***"Soviet agents, masking as diplomatic and consular officials, turned to members of the Communist Party of the United States and to party sympathizers for assistance in penetrating American wartime institutions and projects. The Russians, making the plea that the Americans government was withholding important information and thus unnecessarily delaying Allied victory, recruited many native Communists and fellow-travelers to assist them in obtaining vital secretes about wartime activities."*** **- Jones 1985, p. 263**

SITE SECURITY ORGANIZATIONS

Overall management of security at the Hanford Site has always rested with the federal agency assigned responsibility for operating the site. The federal agencies managing the Hanford Site have been the U.S. Army Corps of Engineers (1942-1946), the Atomic Energy Commission (1947-1974), the Energy Research and Development Administration (1975-1976), and the U.S. Department of Energy (1977-present). Key players in the development and operation of security at the Hanford Site have been the subcontractors.

DEVELOPMENT OF THE SECURITY PROGRAM

In 1942, the Corps selected Du Pont as the prime contractor to create and operate the Hanford Site. In this role, Du Pont assumed the responsibility for protection and security of the Hanford Site. The first step Du Pont took in preparation for this responsibility was to gather a team from its Engineering, Explosives, and Patrol departments in Wilmington, Delaware where they had experience working at other war material production sites (Du Pont 1944-1946). This team developed a Plant Protection Program to satisfy Du Pont's security responsibilities and make "provisions for the establishment and operation of (a) an adequate plant patrol force, (b) effective personnel investigation measures, and (c) positive security regulations and practices for the safeguarding of military information" (Du Pont 1944-1946, sec.1/ Aug. 10, 1945, p.2). Colonel Matthias approved the Plant Protection Program in March 1943.

The overall security goals of the Plant Protection Program during the Manhattan Project were to "keep the Germans from learning anything about our efforts or our technical and scientific advancements, ensure a complete surprise when the bomb was first used in combat, [and] ...keep the Russians from learning of our discoveries and the details of our designs and processes" (Groves 1983, p.141).

In general terms, Du Pont's responsibilities were to "establish, maintain, and operate a protection program for the purpose of protecting the personnel and all property at [the Hanford Site] connected with the design, construction, and operation work by the [Du Pont] Company" (Du Pont 1944-1946, sec. 1/Aug. 10, 1945, Exhibit E, p.1). Details outlined in the Plant Protection Program included (Du Pont 1944-1946, sec. 1/Aug. 10, 1945, Exhibit E, p. 6):

- Establishing a qualified plant patrol force and ensuring patrol officers are provided appropriate training
- Operating effective administrative control and organization of the plant patrol
- Obtaining, constructing, and maintaining any equipment necessary for patrol officers to carry out duties (weapons, fences, towers, guard stations, administration buildings, communication links)
- Establishing patrol post orders and instructions

- Preventing any unauthorized removal of Manhattan Project information or equipment from the Hanford Site, any unauthorized access/entry of persons or vehicles to the site and specific site areas or buildings, and prohibited items from being brought on site
- Creating and operating a program to conduct background investigations on all employees, including fingerprints, photographs, medical exams, contacting personal references, obtaining Personnel Security Questionnaires, Data Cards, Espionage Act and Declaration of Citizenship papers on employees
- Preventing the inappropriate disclosure of Manhattan Project information by issuing safeguarding instructions and advice regarding classified areas and property (documents, equipment) and by providing appropriate facilities and storage for use in safeguarding information
- Creating blackout and air raid facilities

Du Pont had the "responsibility of protecting the physical project facilities against theft, sabotage, and espionage, and for assisting county, state and federal authorities in the enforcement of laws on the plant and in Richland Village" (Du Pont 1944-1946, sec. 3/Oct. 5, 1945, p.1). To accomplish this, Du Pont created a security force, the Hanford Site Patrol, which began its duties at the Hanford Site in 1943 when construction began (DOE 1997b, Du Pont 1944-1946). As construction was completed and operations began in 1944, the Hanford Site Patrol came under the new Protection Department, which was developed as an expansion of the Explosives Department (Du Pont 1944-1946). Around this same time, a Military Police Detachment was assigned to the site, and the Federal Bureau of Investigation also established a local branch office, which played a supportive role.

Although at the end of World War II the Atomic Energy Commission replaced the Corps and the General Electric Company became the prime site contractor, the Hanford Site Patrol remained as the main security organization. The U.S. Army's Camp Hanford enhanced site security from 1951-1960. Camp Hanford was an anti-aircraft artillery and Nike missile complex. See Section 9, Military Operations, for a description of this installation.

In 1965, the operation of the Hanford Site was diversified among several contractors (see Section 1, Construction History, for more information). Individual contractors developed their own accountability guidelines, including security. In general, the various contractors followed the Atomic Energy Commission's master guidelines. However, in some cases, contractor's interpretations had to be ironed out (Rokkan 1997).

Currently, the Safeguards and Security Program (as it is now called) basically still follows the original objectives of physically protecting facilities, property, and equipment; protecting and controlling special nuclear materials; preventing the unauthorized release of classified information; and protecting employees and the public (DOE 1990).

HANFORD SITE PATROL

The Hanford Site Patrol was established in mid-1943 to "prevent the loss, damage or destruction of Hanford Engineer Works' [Hanford Site's] property through theft or sabotage, protect the lives of the employees and residents of the [Manhattan] Project, enforce the laws of the United States and the State of Washington" (Du Pont 1945a, p. 189). By July 1944, the Hanford Site Patrol consisted of approximately 1300 officers whose responsibilities included patrolling construction areas and verifying clearances for access to the Hanford Site (Du Pont 1945a).

The responsibility to protect the Hanford Site was decentralized because of the distance between the various operations. "Operational direction [was] broken down by areas; each area reporting to a central headquarters. [This system] provided for the establishment of self-contained patrol forces in the 100, 200, and 300 Areas, the Hanford Camp [Hanford construction camp], and Richland" (Du Pont 1945a, p. 188) and eventually the 400 Area.

The types of infractions handled by the Hanford Site Patrol included insecure storage of classified materials, unauthorized entry, presence of prohibited items, improper use of keys, and, later, improper handling of classified materials in electronic communications. As a result of such activities, approximately 12 to 24 citations were issued per year. This number decreased as the number of employees and amount of classified material decreased. The disciplinary actions for these offenses depended on the severity and details of the infraction (Curtis 1999).

Patrol Headquarters buildings for which Historic Property Inventory Forms have been prepared are 1720-K for the 100 Areas, 2721-E for the 200 Areas, 3701-D and 3707-D for the 300 Area, and 4790 for the 400 Area (see the Historic Property Inventory Forms for these buildings in Appendix B on the Internet). The Patrol Headquarters building maintained communication through the Patrol Operations Center, which coordinated and relayed secure information in case of an emergency or security breach. The 3701-D Building also contained an Emergency Control Center in its basement for several years that could be isolated from outside air and, thereby, protect the emergency team inside from any airborne materials while they dealt with an emergency. The Patrol Operations Center has been located in the 200 East Area since 1982. It was previously located in the basement of the Federal Building in Richland. The Patrol Operations Center functioned as the main security operations communication headquarters for the Hanford Site. It was the main emergency center on the Hanford Site, as well as central dispatch, responsible for initiating emergency actions.

Patrol officers "were also sworn in as Auxiliary [Military Police] and, in emergency, would be subject to military control" (UPOA 1977b, bk. 4, vol. 6, p. 11.4). Hanford Site Patrol officers carried the highest security clearance on the Hanford Site (and still do today), the Q clearance, and were also held to the same requirement as other Hanford employees not to discuss their work or the Hanford Site with anyone (Beardsley 1998).

In 1952, the total number of Hanford Site Patrol officers had decreased to 595. It was again reduced to 149 officers by 1973. Reasons for the decrease were reactor and guard post closures, reduction of services, and budget constraints (Ogletree 1977). During the next 15 years, however, from 1973-1988, staffing increased because of continued tensions during the Cold War. By 1988, the number of patrol officers had increased to about 450 but was again reduced to less than 400 by 1990 after the threat of the Cold War had subsided (Walton 1999).

As of 1990, a force of Hanford Site Patrol officers was on duty at all times, 7 days a week, 24 hours per day operating as the primary security agency on the Hanford Site. By this time, the role of the Hanford Site Patrol was to provide protection service for the DOE and Site contractors by protecting certain nuclear materials, classified information, facilities, property, and personnel and enforcing federal, state, and local laws "through criminal investigation, traffic enforcement, access control, property inspections, and response/investigation of security incidents, and communication of emergency situations on and off the Hanford Site to Hanford personnel" (DOE 1990, p. 8-1).

Resources of the Hanford Site Patrol in 1990 included sufficient security staff for routine duties, an airborne Special Response Team, a criminal investigation unit, a canine (K-9) unit trained to detect explosives and drugs, a hostage-negotiation team, the Patrol Training Academy, standard and specialized alarm systems and weapons, and a vehicle fleet including sedans, four-wheel drives, helicopters, armored personnel carriers, and boats (DOE 1990).

Benton County Sheriff Deputy Status

Although law enforcement was under the jurisdiction of Benton County, the Benton County Sheriff deputized the Hanford Site Patrol. This status gave the patrol officers authority to administer state laws across the Hanford Site, an area too large for the county to cover adequately (Du Pont 1945a).

In their role as specially assigned Benton County deputies, the Hanford Site Patrol had to deal with drunk and disorderly persons, gambling, prostitution, fighting, homicides, and robberies (see Table 2-8.1). "During the construction period a clerk of the Kennewick, Washington, Justice of the Peace Court was stationed at

> ***"Because of the comparative magnitude of the Hanford Engineer Works [Hanford Site] and the number of persons employed during the construction period, the problem of law enforcement and jurisdiction was much greater than that encountered at the University of Chicago or at Clinton Laboratories. After conferences between State and Federal officials it was decided that concurrent jurisdiction [over the Hanford Site] would lead to confusion so it was decided to leave the administration and enforcement of State laws to the State and/or its subdivisions so long as such laws did not unduly interfere with the protection of the Project. Most of the Project lies within Benton County and as the county was not prepared to assume the entire burden the Benton County Sheriff deputized the Prime Contractor's [Du Pont] patrol officers."*** **- UPOA 1977b, bk. 4, vol. 1, pp. 7.1-7.2**

Hanford and a jail was established as a branch of the Benton County Jail. From May 1943 to August 1944 a total of $72,986.24 was collected by Benton County as bail forfeitures and fines on the Project" (UPOA 1977b, bk. 4, vol. 1, p. 7.3). Although some lawbreakers were terminated, in general it was more important to return the employees to their jobs and keep them working on the project at hand (Sanger 1995). "Un-Americanism" was a catch-all category, which included possession of two-way radios and criticism or protest against President Roosevelt (Bubenzer in Sanger 1995, p. 94).

Table 2-8.1. *Summary of Incidents the Hanford Site Patrol Dealt with in Their Role as Specially Assigned Benton County Deputies between March 15, 1943 and August 28, 1944*

Incident	No.	Incident	No.	Incident	No.
Intoxication	3,156	Gambling	161	Sex Cases	69
Burglary	1,124	Trespassing	144	Draft Evasion	50
Petty Larceny	593	Drunken Driving	123	Un-Americanism	44
Assaults	522	Missing Persons	108	Natural Death	25
Public Nuisance	478	Auto Theft	105	Mob Demonstration	19
Grand Larceny	450	Juvenile Delinquency	97	Accidental Death	19
Wanted Elsewhere	217	Mental Cases	89	Violent Death	5
Vagrancy	197	Bootlegging	88	Suicide	4
Robbery	177				

Patrol Officers Were Required to Maintain a Proper Appearance

Hanford Site patrol officers were trained not only on security enforcement matters but also on what was expected both on and off duty in proper and acceptable appearance, courtesy, etiquette, discipline, and speech. For example, below are some of the guidelines discussed in the Hanford Engineer Works Patrol Training Manual (GE 1958b, sect. VI, pp. 7-8):

- A lack of interest in what is being told one is a breach of courtesy. Do not allow your attention to wander while another person is speaking.
- Be strictly punctual at all engagements, whether business or social.
- Do not lean against a building or assume a loafing attitude while engaged in conversation, or otherwise.
- The Patrolman should refrain from making 'wise cracks' and sharp retorts regardless of the occasion.
- A pleasant facial expression is an asset. It is a smile (not a grin) that has been said to speak all languages.
- When you are in uniform, whether you are technically on or off duty, to the general public you are on duty. Be exemplary in your conduct and edifying in your conversation.
- Every Patrolman owes it to himself and to the profession as a whole to be scrupulously clean in person and dress.
- Cleanliness of person calls for frequent visits to the bathtub and showers; for a clean-shaven face; for the hair properly cut, clean, and well brushed; and for clean hands and fingernails. A sprinkling of dandruff on the collar and shoulders of a coat suggests slovenliness.
- Proper care of the teeth is essential not only because of appearance (this alone would compensate for the trouble), but for the preservation of health. Every precaution should be taken to guard against halitosis.
- It is an inexcusable breach of etiquette to sneeze or cough in the presence of others without first covering the mouth with the handkerchief.

The Hanford Site Patrol also handled traffic infractions. "The Highways on the Project could not be classed as public highways so the Commissioners of Benton County enacted a set of traffic regulations to be enforced by the special deputies on the Project. Other State laws pertaining to public health, sanitation, hunting, and fishing are administered and enforced throughout the area" (UPOA 1977b, bk. 4, vol. 1, pp. 7.1-7.2). The Washington State Patrol held the primary traffic enforcement jurisdiction for State Highway 240 in the southwestern part of the Hanford Site, and the Hanford Patrol, as Benton County deputies, functioned as a secondary enforcement.

In the early 1990s, security programs were cut back due to budget constraints and the relaxation of certain aspects of security at the Hanford Site. At this time, the Benton County Sheriff deputy status of the Hanford Site Patrol was terminated, but the federal status was maintained (Cameron 1998). In 1993, the Benton County Sheriffs Office took over the secondary traffic enforcement on Highway 240 and the primary traffic enforcement of roads on the Hanford Site.

Patrol Training Program

During the Manhattan Project, workers came with varied degrees of security enforcement knowledge. A detailed training program was organized in 1944 including "handling disorderly, violent, or injured persons," firearms and weapons, the Hanford Site Patrol systems and methods, and understanding the importance of the Hanford Site Patrol (Du Pont 1945a, p.195). In addition, workers were required to attend classes on such subjects as courtesy and discipline, Hanford Site geography, physical training, fire fighting, writing reports, and radio operation (Du Pont 1945a).

Figure 2-8.2. *Hanford Patrol Officers at Shooting Practice*

Throughout the Manhattan Project and Cold War era, patrol officers had hands-on training. They were trained in the use of 38-caliber revolvers, 45-caliber submachine guns, 30- and 50-caliber machine guns, 37-mm gas grenades and guns, smoke bombs, tear-gas guns, carbine, riot guns and other special weapons (Du Pont 1945c). A shooting range near the southern end of Gable Mountain was used for shooting practice (see Figure 2-8.2). Other firing ranges were located along Horn Rapids Road. Patrol officers were also trained in the operation of M-8 light armored tanks (see Figure 2-8.3) equipped with a turret 37-mm gun, a 30-caliber machine gun, and a 50-caliber machine gun (GE 1955b). All patrol personnel were eventually trained to work around and within radiation areas. They attended an initial 3-day course with an 8-hour refresher course every other year to obtain and keep their RAD (radiation absorbed dose) Worker Training current. Radiation training was necessary in case security situations on the Hanford Site required patrol officers to enter radioactive zones. This training is still required today, and Hanford Patrol training instructors have become certified as Radiation Worker Training instructors (Cameron 1998).

Figure 2-8.3. *Hanford Patrol Practice Exercise with Armored Tank Around 1949-1950*

Classes were initially taught at the training school building in the Hanford Site construction camp. Eventually, a training academy was established in buildings within the 1100 Area. In 1980, a new Patrol Training Academy complex was built on Horn Rapids Road where the firing ranges were located (Du Pont 1945a). This new Hanford Patrol Training Academy provided a range of training environments including classrooms, library resources, practice shoot houses, an exercise gym, and an obstacle course. In these environments, patrol officers have been taught defense and control tactics, crisis negotiation, safety and first aid, communication systems, and use of special equipment.

In 1977, the Hanford Site Patrol formed the first offensive, anti-terrorist team, called the Tactical Response Team, specifically trained in special weapons and tactics at a DOE facility. This team maintained roving patrol duties and was prepared to react to any emergency situations on the Hanford Site. The members of the Tactical Response Team were specially selected and underwent advanced and specialized training that included use of special advanced weapons, building entry and control, suspect apprehension, use of force, hostage rescue, crowd control, and physical fitness (see Figure 2-8.4) (Rokkan 1997, Cameron 1998). The Tactical Response Team was also trained in the operation of Fast Attack Vehicles (similar to dune buggies) and V-150 armored personnel carriers (DOE 1985). In the mid-1980s, a Special Response Team was developed as a supplement to the security provided by the Hanford Patrol and Tactical Response Team. The Special Response Team was centrally located in the 200 East Area and could quickly respond to any security need by using helicopters. The two teams were eventually combined.

Figure 2-8.4. *Special Response Team Practicing Building Entry, 1994*

COUNTER-INTELLIGENCE AND MILITARY POLICE

For the first year "internal security in the MED [Manhattan Engineer District] was supervised by War Department Counter Intelligence and was thus a responsibility of the Army The War Department's area of responsibility was to include all its civilian employees, as well as all civilians on military reservations or under military control" (Groves 1983, p.138).

In late 1943, changes in philosophy of the counter-intelligence operations of the War Department "made it impossible to rely any longer on the formerly very satisfactory centralized organization" (Groves 1983, p.139). The Corps was forced to create its own counter-intelligence operation.

The counter-intelligence operation maintained a liaison with the Du Pont security organization and "outside agencies: the Federal Bureau of Investigation, the Office of Naval Intelligence, Army Intelligence and Counter-Intelligence, State Police and, in most cases, local police and sheriff's offices in Washington, Idaho, Oregon, Montana, and Wyoming" with relation to prevention of sabotage and espionage of the Hanford Site (UPOA 1977b, bk. 4, vol. 6, p. 11.2)

During the Manhattan Project, typical counter-intelligence activities aimed at preventing sabotage and espionage toward the Hanford Site included a variety of methods such as monitoring conversations, censoring the media, conducting personal investigations, and editing outgoing mail. The focus was on safeguarding activities and personnel clearances and conducting investigations related to military but not civilian operations. Du Pont's security organization handled civilian operations. However, if Du Pont discovered questionable personnel, the case would be turned over to the Corps' counter-intelligence agents for investigation. The Federal Bureau of Investigation handled any espionage or sabotage cases outside the Hanford Site but could be a joint effort if the case appeared to be focused at Hanford (UPOA 1977b). For a detailed historical account of overall security and counter-intelligence at the Hanford Site, see *A Guide to Manhattan Project: Official History and Documents*, Book I, Volume 14, "Intelligence and Security" (UPOA 1977b) and *Manhattan: The Army and the Atomic Bomb*, Chapter XI, "Security" (Jones 1985).

The 744th Military Police Battalion, Company D, was assigned from Fort Lewis to the Hanford Site in July 1944 as a supplement to the Hanford Patrol. By the end of the month, this battalion was designated the Military Police Detachment No. 2. From 1943-1947, the Military Police patrolled the site perimeter and barricades set up around the Hanford Site, which at that time were the Richland, Prosser, and Yakima barricades (Ogletree 1977). They also secured the 213 Final Storage Magazine Building, the Hanford construction camp, the Midway Substation, and the Hanford Ferry and were used to guard classified shipments off site (Du Pont 1944-1946, Du Pont 1945a). In addition, two military police officers were assigned to patrol the Richland Village, mostly on weekends, to keep the peace (CREHST 1998). In

1947, the Military Police force was slowly phased out as the perimeter patrol, and their other security duties were transferred to the Hanford Site Patrol (Rokkan 1997). Eventually, the need for increased security capabilities lead to the development of Camp Hanford into which the troops from Fort Lewis were incorporated. At this time, the National Guard unit left the Hanford Site. For further information on the military at the Hanford Site, see Section 9, Military Operations.

FEDERAL BUREAU OF INVESTIGATION

The Federal Bureau of Investigation (FBI) established an office in Richland Village in the 1940s. The FBI had no criminal investigative jurisdiction at the Hanford Site. This duty was the responsibility of Benton County. Nor did the FBI maintain any security duties at the Hanford Site. However, since the Hanford Site was a federal project, the FBI received security clearances allowing them access to the entire Hanford Site and its buildings. The FBI had three main functions at the Hanford Site:

- Investigate federal crimes against the government, such as theft and fraud
- Investigate employee backgrounds for security clearance
- Investigate violations of the Atomic Energy Act, such as theft of classified materials or trespass in classified areas (Dellwo 1999, Parkhurst 1999)

Several permanently assigned agents maintained the office until 1961, when only one agent was permanently assigned. Supplemental agents were assigned during times of increased investigations. During the mid-1940s, normally 15-20 agents were present (see Figure 2-8.5). This office was part of the Washington State Resident Agency of the FBI and presumably was initially established to support the Hanford Site. However, the Richland office eventually was assigned to also cover all the southwest counties of the state in cases of violations of federal criminal statutes.

Figure 2-8.5. *Agents of the Federal Bureau of Investigation Assigned to Richland, February 10, 1948*

The Sheriff's office or the FBI, depending on the jurisdiction, was called in to handle any crimes committed on the Hanford Site. Crimes that required the involvement of the FBI most commonly included classified material and theft of government property even when the theft was minor or concerned an item that probably was just misplaced. A former FBI agent recalls that employees would take everything from tools and building materials to office supplies during the mid-Cold War period (Parkhurst 1999). An odd occurrence on the Hanford Site, as the same agent recalls, involved the increased use of office supplies during August, the month of lowest employee attendance. It was suspected that employees were taking extra office supplies home to stock up their children's school supplies before school started in September. However, petty theft such as this was a low priority during a time when the focus was to produce and protect plutonium. The attitude was that it would be more expensive for the FBI to catalog and track all the government supplies than it would be to purchase new supplies (Parkhurst 1999).

The FBI focused instead on investigating serious crimes. One unusual and unsolved case occurring during the early-mid Cold War era involved the disappearance of twelve copies of the same classified document over a weekend. The courier, who was supposed to deliver the registered documents from the 300 Area to the Federal Building on a Friday

afternoon, never showed up. It turned out he was killed in an auto accident the next day in Idaho. The accident scene was searched, but the documents were never recovered. On another occasion, an employee ending employment at the Hanford Site decided to take a souvenir with him when he moved. He took a fuel element. When this was discovered, the FBI tracked down the individual and recovered the souvenir (Parkhurst 1999).

The FBI also investigated fraud against the government (misrepresentation or false facts reported to the government) and prosecuted some of the cases. Such investigation included payroll and cost misrepresentation (Parkhurst 1999).

In 1943, the FBI set up an office in Portland, Oregon, which was part of the Soviet Infiltration of the Radiation Laboratories Surveillance Program. Although not totally devoted to Hanford Site security, the program was set up because U.S. Army Intelligence in their top secret Operation Venona discovered a national security threat. The Soviet Union had implemented a major espionage endeavor directed at U.S. atomic weapons facilities (Dellwo 1999). Because the Soviets were considered allies at the time, the Portland FBI office tracked Soviets entering the country through the Portland area using undercover and secret operations. The FBI agents installed listening devices and wiretaps in the Portland area in vehicles, apartments, conference rooms, the Purchasing Commission office, and even a local communist party book store. The FBI monitored approximately 15-20 wiretaps in what was called "The Plant" where monitoring equipment was located.

The result of the monitoring was the FBI discovered that along with the Soviets coming to Portland for legitimate reasons under the Lend-Lease Program, many Soviet espionage agents also were entering the area. Some of these Soviets were trained chemists and physicists with an interest in the Hanford Site. A group of ten Soviets (some of whom were identified as having knowledge of nuclear science) requested a tour of the Columbia Basin region. Special undercover security precautions were taken to protect the secrecy of the Hanford Site. The tour vehicles were equipped with listening devices, and at least one undercover FBI agent accompanied the tour as a Columbia Basin Irrigation Project engineer. The tour was routed such that the Soviet agents were not near the Hanford Site, and when they asked what was done at the site, the reply was that the work was related to hydroelectric power. No Soviet espionage agents were ever discovered to have gained access to the Hanford Site (Dellwo 1999). For additional discussion of foreign espionage, see *Dark Sun: Making of the Hydrogen Bomb* (Rhodes 1995).

SECURITY MEASURES

Security measures were activities the Hanford Site Patrol and other organizations undertook to ensure secrecy in producing the atomic bomb during the Manhattan Project and to prevent the loss of classified information and loss, theft, diversion, or sabotage of nuclear materials during the Cold War.

PATROLLING

Patrolling the Hanford Site was the most obvious of all the security measures. The foot and motor patrol routes covered the entry points along the fence and shore lines of the 100, 200, 300 and 700 Areas (GE n.d.(a)). At one point in 1945, a total of 225 patrol officers on rotation were manning towers (see Figure 2-8.6) along the 200 East Area fence lines before surveillance along these lines was done by vehicle (Sanger 1995). Patrol duties also included patrolling inside facilities and checking for unlocked filing cabinets containing classified materials (Beardsley 1998).

Figure 2-8.6. *Typical Guard Tower Around 1945*

Initially, the Hanford Site Patrol was responsible for patrolling the perimeter of the Hanford Site. The Military Police took over that responsibility in August 1944, which included responsibility for the Midway Substation and the barricades around the perimeter. The Military Police were ordered not to hesitate to fire their weapons if an unauthorized individual tried to force through the barricades. This patrol duty also included a 24-hour-per-day patrol of the Rattlesnake Mountain area by vehicle (CREHST 1998, UPOA 1977b). In 1947, patrol of the perimeter boundary and operation of the perimeter barricades was reassigned to the Hanford Site Patrol.

The Columbia River became restricted to the public along the Hanford Site shoreline beginning February 1943, and the river remained off-limits until 1979 (Rokkan 1997). During that time, the river and shoreline were under surveillance by boat and air patrols (see Figures 2-8.7 and 2-8.8). Initially, the government took over the ferry at the Hanford town site in late 1943 and assigned its operation to Du Pont (Hanford Site Patrol) in association with the development of the River Patrol. Between 1944 and 1965, the River Patrol equipment and administration was transferred at various times between the government and Hanford Site Patrol. River patrolling was discontinued in the 1970s while the responsibility of the Hanford Site Patrol and then reinitiated in the early 1980s until Benton County took over the responsibility in the early 1990s (Du Pont 1945a, Ogletree 1977). Patrol officers used the 181-NA Pumphouse Guard Tower (see the Expanded Historic Property Inventory Form for the 181-NA Tower in Appendix B on the Internet) to monitor the river access to the 100-N Area and general area security.

Figure 2-8.7. *Hanford Boat Patrol Around 1949-1950*

Figure 2-8.8. *Hanford Air Patrol Around 1949-1950*

The Corps established a restricted air space over the Hanford Site during the Manhattan Project to prohibit unauthorized flights across the area. The Air Patrol was organized to enforce this restriction and protect the Hanford Site. The Corps operated the Air Patrol using L-5 and Cub aircraft. Later, civilian pilots working for the Atomic Energy Commission and then the U.S. Department of Energy took over the operation and covered seven different air patrol routes, each averaging 55 miles. These patrol routes supplemented the perimeter patrols (described above), and pilots could communicate any security infractions to each other. The pilots looked for and investigated suspicious activity and flew low enough to identify vehicles (Oregonian 1949). Most of their flight hours were dedicated to patrolling but also included transportation, photography, and spraying vegetation. The Air Patrol was scheduled as a daytime patrol but was on call 24 hours per day (Rokkan 1997).

When the Korean War started in 1950, the Atomic Energy Commission changed the Air Patrol to operate 24 hours per day for extra protection against possible air attacks. As a supplement, air reinforcements could be requested to dispatch fighter planes to the Hanford Site if necessary. In addition, the Atomic Energy Commission had connections with the Air Force's Othello Radar Station and the base at Moses Lake, both of which could be called to help track and intercept trespassers. The bases in Spokane, Portland, and McChord were also available for assistance. Trespassers were reported, chased, and forced to land so the incident could be investigated and possible fines issued by the Federal Aviation Administration (GE 1955b, Rokkan 1997). Routine patrolling of the Hanford Site by aircraft ended in 1964, but the

Air Patrol remained as an organization to monitor the restricted air space over the Hanford Site. The air restriction was modified in the mid-1970s to allow limited flights.

In 1983, the U.S. Department of Energy purchased two helicopters to enhance the Air Patrol's capabilities (see Figure 2-8.9). The helicopters provided aerial observation, investigation and pursuit, a 24-hour air patrol capability, aerial night vision (infrared), and quick transport of a Special Response Team to any area on Hanford Site in case of a security threat. A secondary duty of the helicopter fleet was to aid in the case of emergency or unusual occurrences outside of their main duties. Helicopters were discontinued, along with riverboat patrols, in the early 1990s (RHO 1986-1987, DOE 1985, Thielman 1995).

Figure 2-8.9. *Hanford Site Air Patrol Helicopters*

MEASURES RELATED TO SECRECY DURING THE MANHATTAN PROJECT

Secrecy was extremely important during the Manhattan Project because of an overriding fear the enemy would learn how to create the atomic bomb. Lieutenant General Groves said it was necessary to "minimize the likelihood of vital secrets falling into enemy hands" and the "free exchange of information had to be stopped, if we were to beat our opponents in the race for the first atomic bomb" (Groves 1983, p.140).

Because so many people with varied backgrounds were necessary for the Manhattan Project, it was probable that some potential spies and saboteurs were inadvertently hired. Manhattan Project officials assumed Germany, Japan and the Soviet Union "would learn of the atomic energy program and…use espionage to expand their knowledge of it and sabotage to destroy America's military advantage" (Jones 1985, p.260). Thus, the Corps bought time by using extensive counter-intelligence activities.

Conversation Monitoring

In 1943, agents from the Corps counter-intelligence organization began undercover work to identify any security breaches within the Hanford Site or the local community. The agents "occupied strategically located positions in the project offices, laboratories, and plants, set up listening posts, checked intensively into personal and other records of individuals under suspicion, and took other measures designed to solve espionage cases" (Jones 1985, p. 262). During personal espionage investigations, the Corps used special equipment, such as concealed listening and recording instruments and cameras with special telephoto lenses. Undercover agents would pose as regular members of the work force or community, such as painters, contractors, hotel clerks, tourists, electricians and even gamblers (Jones 1985). One agent had regular informants who would frequently eavesdrop on employees and residents. An agent recalls: "One story they picked up was that we [the Hanford Site] were making rockets, anti-personnel rockets. They told me who had said it. I told my office this person was starting rumors and they took care of it. The guy was young, and unmarried, and he got drafted real quick" (Sanger 1995, p. 140). However, as one former FBI agent remembers, he was amazed at the overall loyalty and trustworthiness of the American citizens with a few exceptions (Dellwo 1999). See Jones (1985) and Rhodes (1995) for further detail.

The counter-intelligence agents investigated unauthorized releases of classified information and in most cases "found that the information leaks…were the result of carelessness or ignorance on the part of the employee or individual with knowledge of the project. But because it was always possible such leaks were surface ramifications of much more dangerous espionage activity, all cases of careless handling of classified data received prompt and rigorous corrective action" (Jones 1985, p. 260). One former employee recalled a specific instance of sensitivity to careless talk: "When they spoke of radiation during that time they referred to it as 'activity.' I made the mistake in the hearing of one of our

managers, I used the word radioactive, because I knew what I was talking about. But, oh my, I was taken into an office and security people told me that word is a No-No, NEVER say that again" (Sanger 1995, p. 176).

In July 1944, the counter-intelligence agents began monitoring telephone conversations as well (Du Pont 1944-1946). One agent recalls, "I was supposed to find out if anyone said anything that sounded wrong. I didn't know what I was listening for, except for anything that sounded covert or to find out if anyone were speculating about what was going on at the plant" Sanger 1995, p.135).

Code Words

Even though no public or private discussions of classified information was allowed, communication was necessary in many job situations between co-workers. Thus, they were advised to create code words for those classified matters which had to be discussed (UPOA 1977b). Code words between employees were never written down but simply memorized (Thayer 1996). This practice applied not only to construction workers but also to upper management who were forced to use code words as well. When Enrico Fermi and Arthur Compton (two experimental physicists and major figures involved in the Manhattan Project) visited the Hanford Site, they used the aliases Dr. Farmer and Mr. Comas so no one would link their names to the Manhattan Project and determine what was being produced at the Hanford Site (Groueff 1967).

The Hanford Site's technical employees used the following official code words, which were classified as secret (GE 1950a):

F Material	finished or purified graphite
Monster	shipping cask
MJ-1	Redox Process
MJ-2	234-5 Plutonium Finishing Plant
P-9	heavy water
P-10	Tritium
P-11	Critical Mass Program
P-12	Exponential Pile (Reactor) Program
RW	radiological warfare

Vendors and Purchasing

Individuals not on the Hanford Site employee list (such as vendors, consultants, and labor representatives) who required access to certain types of information or areas were cleared for those activities during the Manhattan Project (Du Pont 1945a). However, for security reasons, in most cases no information could be given to vendors regarding the plant product, which made the urgency and importance of materials difficult to communicate to vendors. In fact, it was mandatory for vendors who were manufacturing extremely important or critical pieces of equipment for the Hanford Site to have guards stationed in their shops to protect the equipment. To prevent a single vendor from obtaining too much classified information on one piece of equipment, several vendors would be used to manufacture different parts of that equipment (Du Pont 1945c).

Specialized procurement procedures were in place to ensure security of classified equipment orders. Purchase orders were designed to reveal no connection to Hanford's national defense mission. Only project numbers and purchase order numbers identified equipment, and some items were purchased using code names. No signatures of government employees appeared on any procurement paperwork unless it was used as the project's copy (Du Pont 1945c).

Media Censorship

Media censorship was critical because it would help ensure that "nothing [was] published that would in any way disclose vital information… [or] might attract attention to any phase of the project." These matters were kept out of "any

magazine or newspaper that was likely to be read by an enemy agent or by anyone whose knowledge of scientific progress would enable him to guess what was going on" (Groves 1983, p.146).

Colonel Matthias and his staff went to the local and regional newspapers and radio stations to ask that they help keep the Manhattan Project quiet by not publishing or broadcasting reports or seeking any further information about the Hanford Site since it was related to an important war project. He also requested that any articles related to the Hanford Site not be published until he approved them. However, this was difficult for newspapers to do since they worried that their competitors would not hold back their stories. Special attention was given to the local community media because the government takeover of large amounts of land and the increase in population had raised questions and concerns in the community. Matthias encouraged cooperation by promising to provide reports of breaking news to newspapers that complied with his requests. In fact, the day the bomb was dropped he kept this promise and reported the event to the newspapers (Findlay and Hevly 1995, Sanger 1995, UPOA 1977b).

A larger effort than Matthias' local request was the Director of Censorship sending the Censorship Code notification to U.S. editors and broadcasters in 1943. This notification stated that no reports were to be released about "new or secret military weapons…experiments...involving: Production or utilization of atom smashing, atomic energy, atomic fission, atom splitting, or any of their equivalents. The use for military purpose of radium or radioactive materials, heavy water, high-voltage, discharge equipment, cyclotrons. The following elements or any of their components: Polonium, uranium, ytterbium, hafnium, protactinium, radium, thorium, deuterium" (UPOA 1977b, bk. 1, vol. 14, pp. 6.15-16).

Counter-intelligence agents were assigned to seek out any breach in the media that mentioned the Hanford Site or related Manhattan Project subjects. As one reviewer recalls: "Each of us was assigned so many periodicals and newspapers and we had to watch for words. One of the words was 'atom'" (Sanger 1995, p.140).

The newspaper Hanford employees read was the *Sage Sentinel,* which the Hanford Engineer Works Employees Association published from July 1943 to February 1945. This publication was for Hanford employees only and was not allowed to be taken off the Hanford Site even though the paper was under strict regulations not to publish any information revealing the purpose or progress of the Manhattan Project. Beginning in 1944, a City of Richland edition of the *Sage Sentinel* was published. However, it was edited to focus on world, national, and non-sensitive local news (Findlay and Hevly 1995, Du Pont 1945a).

MEASURES RELATED TO RICHLAND VILLAGE

No fence was installed around Richland Village although counter-intelligence agents closely watched its residents, and the Village Police kept a copy of a key to every house in town. Matthias asked Du Pont to keep the town clean and presentable since it would be open to outsiders and possibly a reflection on the Hanford Site (Findlay and Hevly 1995).

> ***"Once construction of the [Richland] village had ended, Groves and Matthias fully intended to build and patrol a fence around it, just as had been done at Oak Ridge and Los Alamos. They wanted to keep operations personnel 'under control for security reasons' and at the same time prevent access to Richland from outside the Project. But Du Pont objected to such controls over the townspeople and apparently succeeded in changing the Army's mind."*** **- Findlay and Hevly 1995, p. 39**

Richland Village was not fenced in but was still on federal property and thus "subject to regulations imposed by the Area Manager," as well as those of Washington State and Benton County (GE n.d.(b), p.3-4). The Hanford Site Patrol contained a separate patrol force located in Richland called the Village Police. They also held special Benton County deputy status and enforced the law within the City of Richland until 1958 when Richland became incorporated and was no longer a government-run city. Village Police responsibilities also included security of the 700 Area (see Figure 2-8.10), which was the Hanford Site's main administrative area (Du Pont n.d, Hunter 1998).

Although attempts may have been made to make Richland Village appear to be a normal town, the necessity for strict security still played a role. The Richland Village phone book was stamped as classified or restricted information. Richland residents' mail was examined to ensure no sensitive information was being communicated out of town through the mail. Telephone calls were tapped to listen for a breach of security or loose talk. Counter-intelligence agents disguised as ordinary residents of the town kept an eye on suspicious characters. Photography within Richland Village was permitted with the exception of the Administration Area. However, photos could not be commercially sold or published without the approval of the Area Manager. Residents owning firearms had to register them with the Hanford Site Patrol, and using personal radio transmitters required approval from the Security and Intelligence Office of the Atomic Energy Commission (Findlay and Hevly 1995, GE n.d.(b), Parkhurst 1999).

Figure 2-8.10. *Guard House to the West Entrance of the 700 Area Staffed by the Richland Village Police Around 1951-1952*

No one was allowed to live in Richland Village unless they were Hanford Site employees or family members. Background investigations were conducted to some degree on all the residents of the village (Parkhurst 1999). In one instance, when a vehicle with out-of-state license plates entered Richland, the Village Police followed the vehicle until the driver reached his destination and then questioned the driver to find out why he was in Richland Village (Rokkan 1997).

SECURITY EDUCATION PROGRAM

> "*The Security Education Program was designed to educate District personnel to become instinctively security-conscious. [Personnel were reminded not to] discuss nor [sic] to circulate news articles or rumors concerning specific types of project information. Appeal was made on the grounds of patriotism, loyalty to the fighting men and the desirability of preventing project information from reaching the enemy.*" - UPOA 1977b, bk. 1, vol. 14, pp. S8-S9

The educational campaign to inform and remind employees of the importance of security was played out in films, posters, billboards, hanging mobiles, literature, specialized talks, telephone disks or stickers, and paycheck inserts (Du Pont 1944-1946, Du Pont 1945a, UPOA 1977b). For examples, see Figure 2-8.11 and Figure 2-12.3 in the Section 12, History of Workers. Other security slogans used on the Hanford Site were (Loeb 1982, p.33):

- "*Caution. Engage brain before starting mouth.*"
- "*A secret can circle the globe without refueling.*"
- "*Alcohol preserves almost anything except a secret.*"

Figure 2-8.11. *Security Billboards in the Mid-1950s*

The security education campaign even extended into the lives of those living in Richland Village–to employees' family members, relatives, and others living in the community and supporting but not working at the Hanford Site. Security awareness talks and films were delivered at different community meetings to bring awareness to the townspeople. Signs with security slogans were posted around the village (Du Pont 1944-1946). Some Dupus Boomer (a local cartoon character) cartoons appeared in the Richland Villager

newspaper during the late 1940s. They contained humorous security reminders to which residents working at the Hanford Site could relate (see Figure 2-8.12).

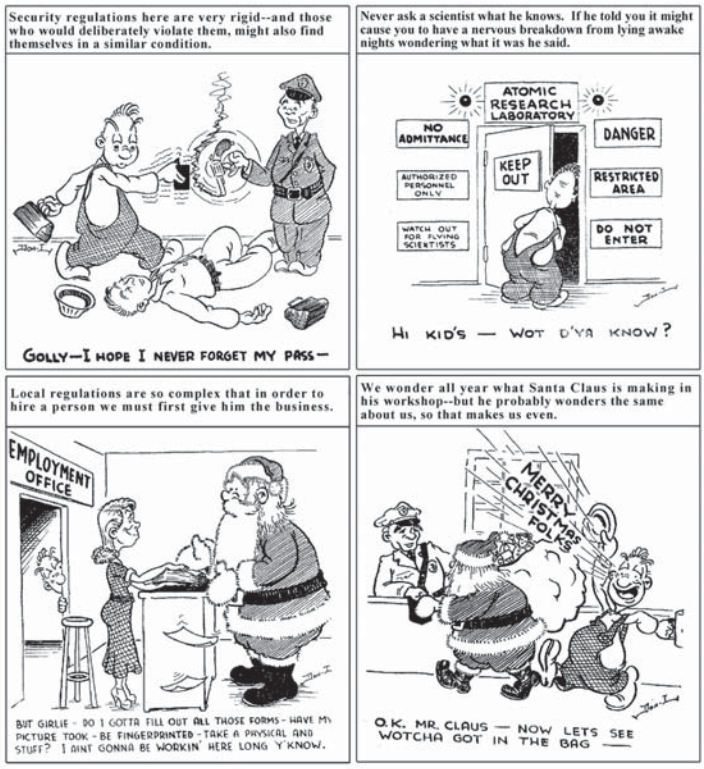

Figure 2-8.12. *Dupus Boomer Cartoons Related to Hanford Site Security*

Security Bulletins were also used to keep the employees informed and reminded of security issues. These bulletins were distributed as early as February 1945 until January 1951. They covered issues such as safeguarding classified information, plant protection, explanations for recent security changes, proper security badge use, and prevention of espionage. Employees received the bulletins on an as-needed basis.

One of the paragraphs in Security Bulletin #3 illustrates the need for this form of security information. As World War II was ending and the world was becoming aware of the Hanford Site's mission, employees needed to understand that the world did not know everything about the Hanford Site and security must still be enforced:

> "*Recent progress made by the United Nations atomic control committee does not lessen our responsibility. The opinion that the military application of atomic energy must be placed under absolute universal control increases our obligation at the present time. Collectively, and in many cases individually, we possess sufficient knowledge of process or operational secrets, which if exposed through violation of our Oath of Secrecy, would undermine or nullify our Government's advantage in its efforts to establish an effective control plan. The fact that our country must retain full control of the atomic bomb secret until controls are in actual operation is a somber reminder that our silence might well mean our salvation.*" - Farley 1946

Another paragraph in Security Bulletin #21 in 1948 illustrates the use of bulletins to emphasis certain security issues:

> "*Wives of project workers also come within this danger zone, not only because of the influence they might exert on their husbands, but because of the unfortunate habit some people have, of being less cautious about discussing their work in front of their wives than they are with social acquaintances or total strangers. Not being sworn to secrecy, as were their husbands, they may feel free to discuss all matters that they feel might be of mutual interest to members of their bridge club, social acquaintances or of more concern as a topic for group discussion. Espionage agents are always alert to such gossip, not so much for the value of the second hand information they might obtain, but as a means of identifying the originator of such revelations as a potential contact for further disclosures.*" - Farley 1948

CLASSIFIED MATERIALS CONTROL

Two types of materials were classified, documents and nuclear material, and access to them was controlled.

Documents

Much of the information created on the Hanford Site during the construction and operation phases of the Manhattan Project and Cold War eras, such as documents and blueprints, were (and are) considered sensitive. A classification program was created to handle the distribution, control, and destruction of such information. Management and key

scientists determined the classification assignments. Nearly all information created was designated as classified (Gydesen 1999).

The main classification levels were Top Secret, Secret, Confidential, and Restricted. These classifications remained in use throughout the Manhattan Project and Cold War eras (Du Pont 1945a, UPOA 1977b, GE n.d.(b)). However, the definitions have been slightly modified over time, and the following categories have been added: Restricted Data, Formally Restricted Data, and National Security Information. To access classified information, the employee had to have the appropriate clearance and the "need to know." The definitions below are those used in the 1940s:

TOP SECRET classification referred to "certain secret documents, information, and material, the security aspect of which is paramount, and whose unauthorized disclosure would cause exceptionally grave danger to the nation" (UPOA 1977b, bk. 1, vol. 14, app. B-7, p. 2). This covered information such as production figures of end product and materials, military use of product, successful methods, plant locations, and set-ups.

SECRET classification referred to "information or features, the disclosure of which might endanger national security, cause serious injury to the interest or prestige of the nation or any governmental activity, or would be of great advantage to a foreign nation" (UPOA 1977b, bk. 1, vol. 14, app. B-7, p. 2). Manhattan Project information involving technical design, processes, construction methods, scope and size of the project, maps, and photographs was covered under this classification.

CONFIDENTIAL classification referred to "information or features…the disclosure of which might be prejudicial to the interest or prestige of the United States, a governmental activity, or an individual, or be of advantage to a foreign nation" (UPOA 1977b, bk. 1, vol. 14, app. B-7, p. 2). Information involving statistics on the materials and personnel required to construct the facility and the construction and production progress was covered under this classification.

RESTRICTED classification referred to "information or feature for official use only, or when disclosure should be limited for reasons of administrative privacy, or denied the general public" (UPOA 1977b, bk. 1, vol. 14, app. B-7, p. 3). Administrative and organization information was covered under this classification. This information was available to employees in general, such as through the security bulletins, but was not publicly available.

UNCLASSIFIED information included data that did not need safeguarding. Classified information was identified by a stamped mark denoting the classification level and category. The stamped marks were usually found on the top and bottom of each page of unbound documents, front and back of photographs, on the first few pages of securely fastened books or pamphlets, and under the scale on maps (UPOA 1977b). When mailed, the classified information (except Top Secret documents) was placed in double-sealed envelopes and sent by registered mail requiring a receipt (Du Pont 1945c).

Only authorized couriers were allowed to transport Top Secret documents. The couriers carried the documents inside two sealed envelopes under their shirts. The documents never left the courier's control until they were delivered.

A Son's Remembrance of His Father's Job as an Atomic Energy Commission Courier in the 1950s

Darrell House's father, as he remembers, was always armed due to his job. Darrell and his siblings knew their father was a courier and his job was very important. However, they were told not to discuss their father's job with anyone. If any one asked about their father's work or where he was during one of his deliveries, the children were to refer people to their mother who would field the questions. Darrell's father was out of town on courier deliveries for a combined total of 4-6 months per year. These trips would arise suddenly, sometimes scheduled only a day before the trip. Darrell's father would come home from work and ask his wife to pack enough clothes for x number of days. This was the only way his wife knew how long he would be gone. She eventually was able guess where he was heading depending on what clothes she was told to pack. One suit probably meant he was making a one day flight delivery to Washington D.C, and 5 or so days of clothes meant he was probably making a delivery to Los Alamos or elsewhere by train (House 1999).

Each employee who had access to classified information or documents was responsible "not to discuss such information, either orally or in writing, with anyone without first being assured of the other party's authority and need to receive such information" (Du Pont 1944-1946, sec. 2/Oct. 2, 1945, p. 13). To identify employees who were cleared to receive or transport classified materials, different types of authorization cards and material passes were issued during the Manhattan Project era:

- Authorization Cards contained the "name of the individual, the category of work for which he was 'cleared,' a description of his type of duties, reference to his supervisor, and personal data" (Du Pont 1945c, p.39). These cards identified the type of information the employee was authorized to see.
- Material and Package Passes were used to "control the movement of material and equipment between plant areas and off the plant" (Du Pont 1944-1946, sec. 2/Oct. 2, 1945, p. 9). These passes were issued only for approved transfers and only to authorized employees. In addition, Authorized Messenger passes were given to employees authorized to transport classified documents outside the barricades (GE 1955b).

Employees were also responsible for physically safeguarding the classified documents in their possession by following specific guidelines including preparation, mailing, handling, accountability, and disposal. A document accountability program had always been enforced at the Hanford Site, which inventoried the location and custodians of classified documents. Originally, teams of clerks personally inspected each employee's classified document holdings to verify the inventory. In the mid-1950s, the system used a punch card system in which a worker would feed a punch card to a computer that would print an individual's classified document inventory. This inventory was sent to the individual to verify, sign and return. Inventory audits were conducted to ensure that the inventory list detailed exactly what was in the individual's possession. Initially, individuals were required to verify inventories every 30 days; this was later changed to every 3 months, then every 6 months, and by the 1970s, every year (Gydesen 1999, Rokkan 1997). The document accountability program was discontinued in the early 1990s.

The storage of classified information had specific requirements. Information needed to be locked in fireproof cabinets or safes that had at least two separate combination locks or were secured by other reasonable measures during the Manhattan Project (Du Pont 1944-1946, UPOA 1977b). Hanford Site Patrol officers inspected offices each day in search of unlocked files containing classified materials. If found, the patrol officers investigated to determine if any information was missing (Beardsley 1998, Du Pont 1944-1946). During the Cold War era, classified information continued to be stored securely either within individual offices or storage vaults.

In 1944, the Classified Files Department developed two major holding locations for controlling classified information including storage, document tracking, and accountability: the 3706 Building in the 300 Area and the 712 Records, Printing, and Mail Office Building in the 700 Area (Du Pont 1944-1946, Gydesen 1999). In addition in 1975, the 3727 Classified Vault Storage Facility was built to securely store classified printed materials. This building was built with 1-foot thick walls and had a traditional lock and key entrance but with an additional secured entrance to the interior vault. That door was made of thick metal and had a combination lock. For more information, see the Historic Property Inventory Forms for the 712 and 3727 Facilities in Appendix B on the Internet.

To destroy classified information, either an authorized employee (in the presence of an authorized officer) or staff in the Classified Files Department shredded or burned the material. When the material was successfully destroyed, the witnessing officer signed a Certification of Destruction as well as a destruction report, if one was filed. The destruction report contained a description of the material, the location where it was destroyed, the date of destruction, and any other details pertaining to the destruction. This destruction procedure was followed for all classified documents, even worksheets (notes), drafts, carbon paper, etc. (UPOA 1977b).

The Operations Security program provided a process to evaluate and control technically unclassified information so that adversaries did not obtain bits and pieces of unclassified information that could help them identify classified information, projects, or activities. During the Manhattan Project and into the Cold War era, operations security was practiced at the Hanford Site to a certain degree through general site security regulations and classified information. However, no

organized program addressed all the issues of operations security. An official and organized concept of operations security was developed as a result of problems during the Vietnam War. The United States instituted Operations Security in many government programs to avoid the release of unclassified information that could be beneficial to adversaries (Luczynski 1999).

The purpose of Operations Security at the Hanford Site has been described as "continual evaluation and reporting of routine operational activities to determine whether classified, sensitive/unclassified or company proprietary information is being inadvertently made available to an adversary or outside unfriendly element" (RHO 1978-1986, chap. 28, p. 1). Communication of information for general operations (such as procurement records, job announcements and resumes, telephone connections, drawings, and travel information) was examined as possible references for adversaries. Countermeasures were developed, recommended, and implemented to resolve any operations security issues (Luczynski 1999, RHO 1978-1986).

With the mission at the Hanford Site changing from nuclear material production to environmental cleanup, the U.S. Department of Energy has been declassifying many of the classified documents. See Chapter 3 for resources to finding information on the present status of formerly classified documents.

Nuclear Material

Classified and Radioactive Materials Passes were used to control "movement of process material or material which should not be inspected due to radioactivity, toxicity, possibility of contamination, security classification or similar reasons" (GE 1955b, sect. IX, pp. 2).

The most common movement of nuclear material on the Hanford Site involved transporting non-radiated fuel rods from the 300 Area to the 100 Areas reactors, irradiated fuel rods from the reactors to the 200 Areas separations plants, and plutonium from the 200 Areas to the storage vaults. In each case, the Hanford Site Plant Railroad transported the nuclear material in specialized rail cars escorted by armed security guards who were also sworn as Auxiliary Military Police. (For more detail, see the Expanded Historic Property Inventory Form for the Hanford Site Plant Railroad in Appendix B on the Internet.) Shipments of uranium billets (feed material for fuel manufacturing in the 300 Area) arrived at the Hanford Site from Chicago on rail cars highly protected by security guards, who on the trip back guarded shipments of classified metal scrap and turnings. The scrap and turnings were by-products of the production process at the Hanford Site that were shipped to other plants for reprocessing (UPOA 1977b, bk. 1, vol. 14, p. 5.3). The rail shipments came onto the Hanford Site through the Riverland Classification Yard (near the Midway Substation west of the Hanford Site) where the War Department turned over the rail cars and materials to Du Pont (Du Pont 1944-1946, UPOA 1977b).

> ***"A former worker at the Hanford Site explains the method of transferring plutonium from the 231-Z Plutonium Metallurgy Facility to the 213 Final Storage Magazine vaults in the side of Gable Mountain: "We would make up a little caravan of one car with the plutonium, one car ahead of us and one car behind us, with Army personnel with .45s and I think machine guns. The vault doors at the storage building required two combinations to open. As I recall, nobody was supposed to know both combinations."*** **- Sanger 1995, p.193**

Armed Hanford Site Patrol officers and military guards have always been assigned to escort classified material being moved on the Hanford Site, an assignment that remains essential today (Du Pont 1944-1946). The 213 vaults were also protected by a guard tower, mounted machine guns, a security fence, and roving patrol (CREHST 1998). For more information, see the Expanded Historic Property Inventory Form for the 231-Z Building in Appendix B on the Internet.

In 1970, the 2736-Z Primary Plutonium Storage Facility was constructed as the first building on the Hanford Site to be planned especially for the safe storage of plutonium and plutonium products and scrap. (For more information, see the Expanded Historic Property Inventory Form for the 2736-Z Facility in Appendix B on the Internet.) This building was

constructed with important security and safety features in mind, such as the 6- to 8-inch thick, reinforced concrete walls, doors, and ceiling with vibration sensors; combination door locks and alarm system; and a detection, measurement, and alarm system called the Vault Safety and Inventory System that was installed in the mid-1980s. The Hanford Site Patrol always had controlled access to this building. Visitors were required to sign a log sheet when they entered and exited.

The most significant transfers of classified nuclear materials off site occurred when plutonium was taken to the plant at Los Alamos, New Mexico for use to produce the atomic bomb. Colonel Matthias and a Military Intelligence escort hand-carried the plutonium to Los Alamos the first time in February 1945. They drove to Portland, Oregon and then took a train to Los Angeles where they met a Los Alamos agent who had no idea that the "wooden box wrapped in brown paper" contained a flask of plutonium "suspended between shock absorbers" (Sanger 1995, p.195). Matthias urged the agent to request a locked compartment on the train to Los Alamos for security reasons. He reinforced the importance of protecting the package by stating that it cost $350 million dollars to make. The agent followed Matthias's advice (Groueff 1967).

As the amount of plutonium transferred to Los Alamos became larger, a more efficient transfer system was necessary. Military Intelligence controlled the delivery. . By mid-1945, they were using a convoy of Army olive-colored panel trucks with no windows or markings that were modified to hold 24 containers of plutonium. These trucks were typically used as Army ambulances and thus aroused little suspicion. Ten agents were assigned to each delivery convoy, which consisted of three trucks with one military police car in the lead and one at the rear. The agents were armed with shotguns, 38-caliber revolvers, and machine guns. The convoy vehicles were all in radio contact with each other, and they were instructed that in case of an accident they were to drive off the road up wind from the accident.

The convoy drove from the Gable Mountain vaults on the Hanford Site (where the trucks had been loaded by Hanford Site agents) approximately 700 miles to Fort Douglas in Salt Lake City, Utah to meet the Los Alamos convoy of agents. The agents responsible for transferring the plutonium from the Hanford Site convoy to the Los Alamos convoy dressed in protective clothing and wore "health badges" (dosimeters) (Sanger 1995, pp. 196-7). The transfer agents unloaded and loaded the convoys out of view of both sets of escort agents. At this point, the Hanford Site's role in the transfer was complete, and delivery to New Mexico became the responsibility of the Los Alamos escort agents (Groueff 1967). In two instances, rush deliveries of two containers were made to Los Alamos using C-47 airplanes (Sanger 1995).

> ***"Except for an officer riding in the ambulance, none of the drivers or soldiers knew what they were transporting. Matthias insisted on the convoy's taking different routes and never stopping at the same place to eat."*** **On occasion, he would send counter-intelligence agents to follow the convoy and make sure they were not developing routine activities that could be used to sabotage the convoy. - Groueff 1967, p. 311**

In August 1946, it became more acceptable to use rail transportation rather than truck convoys for these deliveries (UPOA 1977b). Security guards escorted the plutonium, which was transported in a vault in the middle section of a specialized rail car (Rokkan 1998).

CLASSIFIED AREAS AND CONTROL OVER ACCESS TO THEM

Access to the Hanford Site has always been controlled and limited to authorized persons wearing the appropriate badge. Not every badged employee could access every location or facility at the Hanford Site, and these restricted areas changed over time. For example, during construction "employees having access to 100 and 300 Areas were, as a general rule, not given access to 200 Areas and vice versa" (Du Pont 1944-1946, sec. 2/Oct. 2, 1945, p.15). Later on, employees were permitted access to all areas. However, specific buildings were still restricted to only authorized employees.

During the initial phases of construction, access to specific areas was constantly changing as construction progressed. During this period "certain sections and buildings in plant areas were restricted, and access to them was limited to

persons who had been cleared to receive classified information and who had business to perform within the area" (Du Pont 1944-1946, sec. 2/ Oct. 2, 1945, p. 9). These initial areas included the 100 B Area, 100 D Area, 100 F Area, Test Pile (Reactor), Metal Fabrication, Cold Semi-Works (300 Area), 200 Area Canyon and Isolation Building, Temporary Construction Building, and 105 Warehouse. (Du Pont 1944-1946).

A former construction worker at the 100 B Area recalls an example of the changing access requirements: *"That thing [the B Reactor] was so secret, maybe a person would be cleared for only one side of it. Four sides square, and maybe a guy would be cleared for the intake side but he wouldn't be cleared for the exhaust side. And everybody was not cleared to go up in it. You get about halfway up…and they'd be an armed guard, and he would check you out and if your name was on the list you could go by. If it wasn't that was as far as you went. That was every day. Maybe you could go up Monday and you couldn't go Tuesday."* - Sanger 1995, p.136

Each area on the Hanford Site was under one of three access designations:

- **Controlled Area** where "control of entrance is desirable for general security, but within which all 'Restricted Data' is protected further by guarded repositories or confinement within 'exclusion' or 'limited' areas" (GE 1955b, sect. VIII, p. 1).
- **Limited Area** where "activities involving 'Restricted Data' are safeguarded, and within which freedom of movement of any individual does not in itself constitute access to 'Restricted Data' meaning that access is available to authorized personnel but their access to further information is restricted by guards or other internal controls" (GE 1955b, sect. VIII, p. 1). Limited areas required a specific clearance level to enter.
- **Exclusion Area** where "vital operations involving 'Restricted Data' [were] performed, and within which the freedom of movement of any individual of itself constitutes access to 'Restricted Data' meaning that just having access to this area would cause classified information to be available to the employee" (GE 1955b, sect. VIII, p. 1). Exclusion areas required the highest clearance level (Q) to enter (GE 1955b, GE 1958b).

In the mid-1980s, the Hanford Site was divided into five access categories, all of which required a security identification badge. However, badges were marked with different symbols to identify the employee's type of access clearance (see the Background Investigations and Clearances Sub-Section below):

- The definition of a **Controlled Area** basically stayed the same and covered the 700 and 100 Areas.
- The new **Security Area** covered controlled access including the area between the Wye and Yakima Barricades where the space was "subject to physical protection" (RHO 1986-1987, sect. 72-01.1, p. 3).
- The **Limited Area** became an "area enclosed by a physical barrier [and] subject to physical protection" such as the 100, 200, 300, and 400 Areas (RHO 1986-1987, sect. 72-01.1, p. 3).
- The **Protected Area** was normally located within a Limited Area and was also enclosed by a physical barrier. An example is the Plutonium Finishing Plant (PFP) (a protected area) within the 200 West Area (a limited area).
- The **Material Access** Area contained special nuclear materials located inside a Protected Area and was protected by a physical barrier (RHO 1986-1987).

Fences, Barricades, and Badge Houses

The Hanford Site was constructed with access control points at several locations. The main access control points were the perimeter barricades along the Hanford Site boundary, which was entirely enclosed by a three-strand barbed wire fence (see Figure 2-8.13). This fence carried "No Trespassing," "No Parking," and "No Photography" signs and warning signs at each end of Highway 240 as it entered the Hanford Site telling motorists to quickly leave the area if the light was flashing for threat of radiation (Rokkan 1997). The fence line displays only "No Trespassing" signs today.

The original perimeter barricades or badge houses, built in the early to mid-1940s, were the Richland/300 Area Barricade (see Figure 2-8.14), Prosser Barricade, and the Yakima Barricade. These barricades were located along the main access routes to the Hanford Site: Route 4 South near the 300 Area, Route 10 near the Yakima River, and Route 11A near its connection to Highway 24. The Richland and Prosser Barricades were consolidated and taken out of service with the construction of the Wye Barricade located at the intersection of Route 4 South and Route 2 South in 1959

(see Figure 2-8.13). The Yakima Barricade was replaced in 1982. (See the Historic Property Inventory Form for the Yakima Barricade, 604 Building, in Appendix B on the Internet for more information.)

The Hanford Site Patrol staffed these barricades and checked for the presence of security badges on individuals entering the Hanford Site. During the Manhattan Project when the Military Police staffed the perimeter barricades (badge houses) and employees were bussed on and off the Hanford Site, the Military Police stopped every bus at the barricade and a patrolman boarded, checked every individual for their security badge, and examined all personal items such as lunch boxes (CREHST 1998).

Secondary access control points were located at the main entrances to each of the construction areas, later operation areas. These were the area badge houses (also called guardhouses) and area fences. The Hanford Site Patrol, who checked the security badges of those entering the specific area for the appropriate clearance, staffed the area badge houses. It was also at this badge house where employees picked up their Area Badges and dosimeter (as described in Badges and Passes below). Examples of typical area badge houses are 1701-K and 3701-N (see the Historic Property Inventory Forms for these buildings in Appendix B on the Internet for more information).

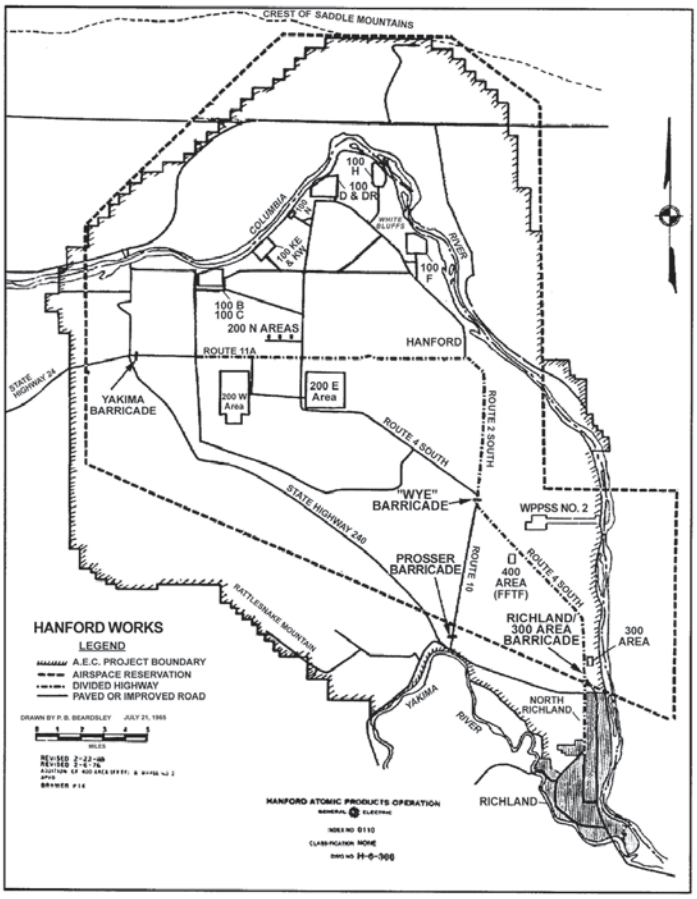

Figure 2-8.13. *Map Showing the Security Barricades at the Hanford Site, Revised 1988*

The security fences around the operation areas, such as the reactor and separation areas, were installed as certain facilities within the areas were completed and consisted mainly of tall, chain-link fences topped with strands of barbed wire. For example, when a river pump house was completed, a fence was erected all around it for protection. Then when another building such as a power house or office was completed, the fence was re-routed to also enclose those buildings until eventually the entire area was fenced off and accessible only through the area badge houses (Du Pont 1944-1946).

Figure 2-8.14. *Access Control Point at the 300 Area Barricade, 1951*

A third level of access control points was located at the entrances to specific protected areas (within the operation areas) requiring further access control and authorization to enter. These areas were surrounded by another chain-link security fence topped with strands of barbed and/or coils of razor wire and were accessed through a specific badge house. One example was the PUREX protected area, which was accessed through the 2701-AB PUREX Badge House and contained increased security measures such as metal detectors and x-ray machines (such as those at airports), special nuclear material detectors, key card access (issued for personnel accountability and interior area access controls), and alarm systems (RHO 1986-87). The 1112-N Badge House is another example. See the Historic Property Inventory Forms for the 2701-AB and 1112-N badge houses in Appendix B on the Internet for more information.

Badges and Passes

The employee badge system was one of the crucial access control tools supporting the Hanford Site security system. No one without a badge was allowed through any badge house. In addition, the badges indicated which areas the individual was authorized to enter. The major types of badges that have been worn on the Hanford Site are listed below (Du Pont 1944-1946):

- The **Photo-Identification Pass** was the general badge issued to every employee. It was used very generally to identify the employee and to gain access to the Administration Area (700 Area) and through the main Hanford Site perimeter barricades. An Employee's Temporary Tag Pass was sometimes used to temporarily identify the employee until a Photo Identification Pass could be issued. During construction before many areas were subject to more controlled access restrictions, the Photo Identification Pass (also called the Project Badge) was the only pass necessary on the Hanford Site. As the Hanford Site and its facilities developed, more and different areas, buildings, and sections of buildings were restricted according to the progress of construction and the security department discretion. This evolution led to the need for Area Badges to control access (Du Pont 1944-1946, Du Pont 1945a).
- The **Area Badge** was used as a secondary employee identification, but this badge allowed personnel access to the manufacturing areas to which the individual was authorized or cleared to enter because of their job. Instead of being carried by the employee at all times as was the case with the Photo-Identification Pass, this badge was issued and surrendered along with a personnel dosimeter or health instrument for radiation monitoring at the area badge house. To obtain an Area Badge, the employee had to call out his badge number to the patrolman at the area badge or guard house and show his Photo-Identification Pass (see Figure 2-8.15). The patrolman was responsible for obtaining a positive identification comparison between the two badges. Once the Area Badge was issued, the employee was allowed to enter the area. Infrequent, authorized visitors to an area would pick up an area clearance card upon entering the area. Employees were not allowed inside specific buildings in the area unless their Area Badge was marked by a specific symbol (see the Background Investigations and Clearances Sub-Section below) or unless the supervisor in charge issued them a red tag pass for that building. Upon leaving the area, the Area Badge and dosimeters were returned to the patrol officer and stored in that area's badge house. Monthly lists were sent to department heads showing employees who had Area Badges. They were reviewed and updated as necessary to control and monitor employee access (Du Pont 1944-1946).

Figure 2-8.15. *Hanford Patrol Officer Checking Photo Identification Pass and Issuing Gamma Pencil Dosimeter*

Patrol officers at the badge houses have always been required to visually verify that the individual passing through the checkpoint was the same person appearing in the photograph on their security badge. Badge photos had to be kept up-to-date with the person's appearance. For instance, a new picture was necessary if a beard was shaved or grown. If the visual comparison was not accurate enough, employees were advised to get a new photo taken (GE 1958b).

Background Investigations and Clearances

The personal and professional backgrounds of potential Hanford Site employees were (and continue to be today to a certain degree) investigated before they were employed. The goal of the personal background investigations in the early years of the Hanford Site was to make "every effort to find out before employing anyone whether there was anything in his background that would make him a possible source of danger, paying particular attention to his vulnerability to

blackmail, arising from some prior indiscretion" (Groves 1983, p. 141). Generally, this basic goal held throughout the Cold War with additional attention added to ensure the applicant was in fact the person they claimed to be (Parkhurst 1999).

The investigation process began with employees filling out Personnel Security Questionnaires that detailed personal history, education (sometimes even including attendance and grades), employment history, organization memberships, foreign countries visited, and personal references (Du Pont 1944-1946). Attempts were made to verify this information and determine the character of the individual.

Originally, potential employees were investigated further if their job duties would require them to handle confidential or secret information or their Personnel Security Questionnaires revealed information that might lead to questionable loyalty, such as birthplace or military service in any country other than the United States, employment not fully detailed, and membership in questionable organizations. Sometimes the more thorough investigations went back as far as childhood. Even more thorough investigations were required for individuals who had oriental ancestry, were emigrants from enemy countries, had visited or previously lived in enemy countries since 1933, had family in an enemy country, had a criminal history of a nature that might endanger the Manhattan Project, or had served in the military in an enemy country (Groves 1983, UPOA 1977b).

Because the Hanford Site was on a fast track and required a large construction work force, occasionally investigators had to cut corners on background investigations and security clearances of employees to supply enough hands to Manhattan Project. "Faced with a continuing shortage of scientifically and technically trained personnel, project leaders early on had adopted the policy of weighing the degree of risk against the contributions an employee with security clearance problems could make in development of atomic weapons" (Jones 1985, p. 260). In addition, even when background investigations were not quite complete, employees were placed on non-classified assignments until cleared for other work (Groves 1983).

All employees were fingerprinted. The fingerprints of any individual matching arrest records at the FBI were further investigated. The arrest record was compared with what the individual had reported when applying. If any discrepancies existed, the individual was questioned. "Depending on his attitude when questioned, the seriousness of his arrest record, the quality of his work, his absentee record, and the need for men of his particular ability, he was either retained or discharged. No one was hired or kept on who had been convicted of rape, arson, or narcotics charges. Such persons were felt to be unreliable because of their demonstrated weakness in moral fiber and their liability to blackmail" (Groves 1983, p.145).

The standards for employment of the construction employees were less strict than that of the operations employees. So when construction came close to completion in the mid-1940s and employees would be free to transfer to the operation department, each construction employee was re-investigated to guarantee that they met the standards for the new position. Re-investigation included reviewing references, re-interviewing, and obtaining more personal history details. In some cases, the re-investigation determined that certain individuals who had worked on construction did not pass the requirements for operations work. They could be assigned jobs in non-classified areas with notes in their files that they were not to receive any area badges that gave clearance to enter the production areas. Even when current Du Pont employees from other sites where transferred to the Hanford Site, their personnel files were reviewed to ensure compliance with Hanford's security standards (Du Pont 1944-1946).

The same security requirements were applied to the hiring of subcontractors to work on the Hanford Site. "District contractors or subcontractors first had to be cleared before classified information could be made available to them. Company clearance[s were] designed principally to eliminate contractors with potentially subversive foreign affiliations and to prevent fraud and collusion, by disclosing the financial assets of the company, members of the directors, principle stockholders, etc. Clearance was based on...a credit report, and agency checks of key personnel" (UPOA 1977b, bk. 1, vol. 14, pp. 3.7-3.8).

Each Hanford Site employee was authorized or cleared to receive only certain types of information and enter only certain areas on the Hanford Site for security and secrecy reasons. To identify what clearances an employee was given, a clearance symbol system was established. The symbol that appeared on the employee's badge identified the clearance categories that the individual had been granted. The clearance symbols used were the Q, L, and WA.

The Q clearance was the highest clearance category and was originally indicated by a blue background on the badge. It cleared the individual for access to all types of classified information "as determined by job-related need-to-know" (RHO 1986-87, sect. 72-01, p. 1). The Q clearance also authorized the employee to transport classified documents and to have access to special nuclear materials and protected areas (RHO 1986-87, sect.72-01.1, p. 2). An L clearance was the next clearance category and was originally indicated by a yellow background on the badge. It also cleared the individual to receive classified information, but only at the confidential and restricted level and authorized the employee to have access to protected areas. The "WA" (work authorization) status was for employees who were not cleared to receive any classified information or enter any protected areas (RHO 1986-1987). Other badge symbols that were used previously to indicate access authorization to specific areas and buildings are shown in Table 2-8.2.

Table 2-8.2. *Badge Symbols for Secured Areas in the Mid-1980s*

Access Controlled Areas	Location	Badge Symbol
Limited Areas	100 Area	1
200 Areas		2
300 Areas		3
400 Areas		4
Protected Areas	K Storage Basin	K
100 Areas	N Reactor	N
	Vital Area (N Reactor/Control Room)	V
200 Areas	209-E Building	E
	PUREX Facility	X
	PFP	Z
300 Area	308, 324, and 325 Buildings	A
400 Area	Permanent Key Card Entry	P
	Temporary Key Card Entry	T
	Yard Access Only	Y
700 Area	Data Processing Center (Federal Bldg.)	D

During the Manhattan Project, many employees were required to hold Q clearances thus necessitating a large number of background investigations. The Federal Bureau of Investigation conducted many of the background investigations for Q clearances on Hanford Site applicants for the Atomic Energy Commission. The load of background investigations would frequently require the Richland Federal Bureau of Investigation office to bring in additional agents. The policy on these investigations was that all contacts were made personally. This meant they had to rely on other Federal Bureau of Investigation offices if an applicant ever lived, worked, went to school, etc., in another state. The Federal Bureau of Investigation agents in that state made the personal contacts and reported back to the Richland Federal Bureau of Investigation office. By 1971, the number of Q clearance background investigations had dropped significantly. However, the Federal Bureau of Investigation had begun to conduct reinvestigations on current employees in high security clearance positions to update their personal files (Parkhurst 1999).

During the late 1980s, all badges had a green (DOE standard) or gray (Hanford Site- specific) background, and the symbols were simplified. The letter clearance code was replaced with numbers, the higher the number, the more access allowed. The Q clearances were indicated by a 3, L clearances by a 2, and WA clearances by a 1. The Q/3 clearances had access to all types of information and areas as before. The L/2 clearances had access to limited and protected areas (K Basins, Plutonium Finishing Plant, Fast Flux Test Facility) and secret and confidential information. The WA/1 clearances had access to everything else not requiring a Q/3 or L/2 clearance. The only other symbol was Z clearance (referring to the building number of the Plutonium Finishing Plant, 234-5Z), which allowed access to the Plutonium Finishing Plant for those with at least a L/2 clearance. This information is available only on a secure, not public, website. For further information or verification of this information, contact Larry Wonch (Administrative Security at B&W Protection, Inc.).

Figure 2-8.16. *Subject to Search Billboard*

Figure 2-8.17. *Hanford Patrol Officer Inspecting a Vehicle at a Perimeter Barricade, 1957*

SAFEGUARDS

Security measures included safeguards, such as conducting searches, prohibiting certain items, establishing a lock and key system, securing computers, and installing electronic security devices.

Searches and Prohibited Items

As part of the security measures against sabotage and espionage at the Hanford Site, patrol officers conducted both body and vehicle searches to prevent contraband items from entering the Hanford Site and classified materials from leaving it.

Searches were more necessary and frequent during the Manhattan Project than during the later Cold War era. However, everything and everyone were still subject to search at any time (see Figure 2-8.16). In some restricted areas, every person and every vehicle were searched upon entry and exit (Du Pont 1944-1946, sec. 2/Oct. 2, 1945, p. 4). By the mid-1980s, locations requiring personal property searches during entry and exit were reduced to the following protected areas and facilities: 100 N Area, 100 K Basin, Plutonium Finishing Plant (234-5Z), Plutonium-Uranium Extraction Facility (202-A), Critical Mass Laboratory (209-E), Plutonium Fabrication Pilot Plant (308), and Fast Flux Test Facility (405). Routine and random searches were still performed across the rest of the Hanford Site (RHO 1986-1987). Personal searches included sporadic searches of the person's body and clothing and examination of bags, lunch pails, purses, etc. (GE 1958b). Vehicle searches involved examination of the interior (including glove compartment), trunk, under the hood, and under the vehicle body (chassis) (see Figure 2-8.17) (Du Pont 1944-1946, GE 1955b).

Items considered contraband or prohibited on the Hanford Site included firearms or weapons, cameras and recording or transmitting devices, illegal drugs and alcohol, explosives, and incendiary devices (RHO 1986-1987). Originally, the list also included binoculars, telescopes, film, and personal vehicles (Du Pont 1945a). Prohibited items were confiscated unless the individual had a Prohibited Articles Property Pass, which was issued for prohibited items approved for use on the Hanford Site because they were necessary to conduct specific work (RHO 1986-1987). Today, personal vehicle access is permitted on most of the Hanford Site with the exception of much of the 300 and 400 Areas and parts of the 100 and 200 Areas. The Hanford Site Patrol can periodically conduct vehicle and personal searches anywhere on the Hanford Site.

Lock and Key System

A lock and key system was started at the Hanford Site during the mid-1940s. "Each area [had] an independent key system, consisting of a single grand master with several master and sub-master keys subsidiary to it" (Du Pont n.d, p. 12) for buildings and equipment. "A group of these master type keys [were] the individual keys for (1) building door lock sets and padlocks; and (2) special purpose padlocks" (Du Pont n.d, p. 13). The Hanford Site Patrol has been responsible for the key system since October 1944 (Du Pont n.d.).

Magnetic (mag) Cards began to be used 1979 as a type of key to control access to buildings by authorized employees. The magnetic card was inserted into a reader at the entrance to a building. The reader scanned the card to identify the magnetic strip inside (Cadd 1998). If accepted, the door briefly unlocked for the employee to enter. Similarly, Key Cards were issued in some locations, such as PUREX, as employees passed through area badge houses. These cards were individually programmed to allow access to authorized locations within the area; for example, through certain doors and into certain rooms. OMNI Locks (key pads) were another device used at the Hanford Site to control access to restricted buildings or rooms. These locks used a security access code that had to be correctly punched into the keypad.

By the mid-1980s, two types of locks and keys existed: security and non-security. Upon official request, security keys were issued to employees with Q or L clearances for access to areas, buildings, etc., containing classified information or equipment when necessary to perform their work. Non-security keys to unclassified and non-sensitive areas were issued upon official request to any prime contractor employee. Keys were issued to other contractor employees when the contractor's security department submitted a request in writing and only for the areas, buildings, etc., associated with the contractor (RHO 1986-1987).

Computer Security

In the early days of computers, computer security consisted only of employees using passwords, backing up the information on their computers, and setting up lock and key systems to protect sensitive information. It was not until the U.S. Department of Energy issued Order 1360.2, Unclassified Computer Security for Sensitive Systems in 1980 that an official computer security plan was put into effect (Fluckiger 1998).

Computer security has been defined as "the protection resulting from all measures designed to prevent deliberate or inadvertent unauthorized disclosure, acquisition, manipulation, modification, or loss of information contained in a [computer] system" (RHO 1978-1986, chap. 21, p. 3). Computers were ranked as classified or unclassified. Classified computers were stored in fully enclosed rooms with security access alarms. Only authorized employees had access to the computer room and the computer system via access locks, identification-verifying systems, and password protection. Users of classified computers had to have the appropriate security clearance and special computer security training. Users of unclassified computers received computer security training as well. Even unclassified computers require a certain amount of security, such as the use of passwords. The Safeguards and Security personnel randomly examined unclassified computer systems to ensure they contained no classified information. (RHO 1978-1986).

Electronic Security Devices

Over the years, electronic security devices were incorporated into the Hanford Site security system. The use of electronic devices added state-of-the-art technology, efficiency, and effectiveness to security and allowed the Hanford Site Patrol to streamline its patrol routes and posts. The electronic devices cover two main areas, nuclear materials and intruders, and consist basically of detection systems, alarms, and complex computer systems. Because many of the electronic systems are presently in use, this discussion is limited to a few examples of either discontinued or non-sensitive systems.

Nuclear Material Control Systems: Until the 1960s, nuclear material was tracked manually on paper. During the 1960s, the General Electric Company used a punch card system to track nuclear material. Beginning in 1965 with contractor diversification at the Hanford Site, various systems were developed and used by individual contractors to track the material for which they were responsible. In 1967, the Atomic Energy Commission

established the Nuclear Materials Management and Safeguards System. This system (applied at all the Atomic Energy Commission nuclear material sites and still in use) had a computerized database to track nuclear material at all the sites. The Hanford Site submitted nuclear material data each month to this database (Walker 1999).

From 1980-1992, the Westinghouse Hanford Company used the Safeguards Active Response Inventory System (SARIS) to track the inventory and location of nuclear material on the Hanford Site. It consisted of three separate computer systems: SARIS I located in the 308 Plutonium Fabrication Pilot Plant and the 309 Plutonium Recycle Test Reactor facility, SARIS II located in the 427 Fuels Materials and Examination Facility, and the Nuclear Material Safeguards Computer System located in the 234-5Z Plutonium Finishing Plant. At each of these locations, a nuclear material custodian logged in information on the movement and storage of the nuclear material. SARIS systems were later replaced with new and improved operating systems. See the Expanded Historic Property Inventory Forms in Appendix B on the Internet for more information on the buildings mentioned above.

The fourth computer system used by Westinghouse, the Vault Safety and Inventory System, was installed in the 2736-Z Primary Plutonium Storage Facility in 1985/1986 for "on-line, real-time monitoring of the items stored in vaults" (DOE 1990, p. 8-4). (For more information, see the Expanded Historic Property Inventory Forms for these buildings in Appendix B on the Internet.) This system was a state-of-the-art detection, measurement, annunciation, and alarm system. It could monitor the inventory of individual canisters containing plutonium by the unique electronic signature that each canister contained. This system is still in service.

The Plutonium Finishing Plant had an associated Central Alarm Station in the 2701-ZA Building (for more information, see the Historic Property Inventory Form for the 2701-ZA Building in Appendix B on the Internet). From this building, patrol officers watched the activities in the Plutonium Finishing Plant complex, including the shipping/receiving area, access gates, and storage vaults 24 hours per day. Alarms would alert the Hanford Site Patrol to breaches in security, and they would take appropriate action. This system is still in service.

Intruder Detection: During the early days at the Hanford Site, the only way to detect intruders was visually. Later, technological advances brought detection equipment to the Hanford Site. Many of these intruder detection systems are still in place and therefore cannot be discussed in detail. The types of detection systems that have been used on the Hanford Site include, but are not limited to, motion sensors of various types, surveillance cameras, night vision equipment, and metal detectors, such as those used at airports. The locations and use of these systems have changed over time as security requirements of specific areas have changed.

EMERGENCY PREPAREDNESS

The Hanford Site Emergency Preparedness Program was initiated in 1943 as the Project Emergency Plan to cover a range of emergency situations. Types of emergencies affecting site security include sabotage and hostage situations. For specifics about emergency situations such as natural disasters, fires, and medical emergencies, see Section 10, Worker Health and Safety. The original mission of the Project Emergency Plan was to provide "maximum protection to life and property during a period of emergency" (Du Pont 1945a, p. 1373).

The Project Emergency Plan during the Manhattan Project called for a response group, made up of a variety of staff members under a central coordinator, to report to the field manager for emergencies whether security related or not. This group received backup and support from a parallel response group consisting of the area engineer and the Hanford Site Patrol. The support group was prepared to contribute staff and equipment during emergencies. The Project Emergency Plan mainly consisted of warning notifications and procedures for emergency evacuation of personnel from the 100 Area, 200 Areas, and the Hanford construction camp. Evacuations were originally monitored and controlled within the Emergency Control Center located at the construction camp Patrol Headquarters. A secondary control center was located in Richland Village (Du Pont 1945a, GE 1958b).

Since the beginning of the Manhattan Project, practice evacuations were conducted regularly. The crash alarm emergency telephone system installed in the 100 and 200 Areas in late 1945 was tested during these practices (Du Pont 1944-1946). One scenario outlined emergency procedures in case of a night air raid on the Hanford Site. A total plant

blackout was planned so that enemy aircraft would have difficulty sighting the targets (presumably the production facilities). As described in Security Bulletin #54 (Jaynes 1950), the Hanford Site Patrol would be responsible for notifying all key departments with duties to perform during this type of emergency. Employees would also be notified of the blackout. It was the employees' responsibility to remain indoors and turn off all exterior and interior lights. If it was necessary to use indoor lights, windows and doors would be covered with blackout curtains such that no light could escape. Any emergency outdoor lights used during a blackout were to be pointed downward. Passengers in vehicles (including both automobiles and trains) would stop the vehicle, turn off all lights, and enter the nearest building or, if not near a building, remain in the vehicle. The patrol officers would restrict vehicle traffic from entering or exiting the perimeter barricades and would be stationed at main road intersections on the Hanford Site to stop and hold traffic with their lights off until the blackout was canceled (Jaynes 1950).

With the Cold War, emergency preparedness concerns increased and the program's goal focused on protecting the Hanford Site employees first, the environment second, and the facilities last (Schuette 1998). The potential for sabotage of critical facilities and holding the world hostage with nuclear materials became the greatest concern during the Cold War era. By 1962, Radiological Emergency plans dictated the organization of Radiological Emergency Staff, personnel whose special skills and experience made them useful in responding to a radiological emergency. The Radiological Emergency Staff included plotters to track the radiological emissions and emergency status (levels of staff, equipment, and exposure), a message clerk to relay messages from the plotters to the radio room, runners to maintain team communication, a meteorologist to track the effect of the weather on the emergency, radiation survey team members, and a supervisor.

Although called the Radiological Emergency Staff, the members of this team were notified in case of emergencies caused by any release including biological, chemical, or radiological. When notified, the members reported immediately to the Plotting Room located in the basement of the last wing of the 703 Administration Building (for details see the Historic Property Inventory Form for 703 Building in Appendix B on the Internet). If the emergency occurred during off hours, the members were notified through the Richland Crash Alarm System, which was a "block of twenty ordinary residential telephones in member's [sic] homes, all of which could be connected into a conference call from the master phone at the Security Patrol Emergency Officer's desk in the basement of the 703 Building" (Heid 1962, no. 01.1, p.11). These phones would ring continuously, interrupt any busy phones while cutting off that connection, and deliver an emergency notification, instructions, and a call to duty.

Table 2-8.3. *Hanford Site Emergency Alarms*

	Meaning	Employee Action
Howler (ah-oo-gah)	Criticality	Run, don't walk, out of the building to staging area at least 100 feet away
Gong or Horn	Fire	Evacuate building and go to staging area
Wavering/Wailing Siren	Take Cover	Stay inside or seek shelter, do not leave building, close windows, doors, and ventilation systems
Steady Siren	Evacuation	Go to staging area after securing work station
Continuous Air Monitor	Airborne	Evacuate area immediately; stop work and exit building
or Ringing Bell and Flashing Red Light	Radioactivity	
Crash Alarm (telephone)	Emergency Instructions	Answer telephone crash alarm and listen for instructions

In the case of a radiological emergency, Hanford Site employees would be notified by the "Take Cover" and "Evacuation" Hanford Site Emergency Alarms (see Table 2-8.3). In the event of a radiological emergency evacuation, a caravan transported employees to staging areas located past the Yakima Barricade in the community of Whitstran, southwest of the Hanford Site (Heid 1962). Later, staging areas were developed in each Hanford Site area. In many cases, individual buildings had specific staging areas that were also used for general building emergencies such as fires.

The Emergency Preparedness Program was continually updated, modified, and streamlined to meet changing conditions. Training, testing, and practices were carried out throughout the year by individual contractors involved in the program, and once a year the Emergency Preparedness staff conducted a large-scale emergency exercise at the Hanford Site. In the event of an actual emergency, an incident command post would be set up in the field to handle the situation. Also, the Emergency Operation Center in the Federal Building in Richland would be staffed with appropriate personnel to support the command post and handle off-site public notification. Site security personnel stationed in the Emergency Operation Center would stay in contact with the Emergency Control Centers, which have been located in the 100-N, 200 East, 200 West, 300, and 400 Areas since the early 1980s (Schuette 1998).

The Emergency Operation Center (now called the Patrol Operations Center) is located in the 2721-E Building in the 200 East Area. Before 1983, the Patrol Operations Center was located in the basement of the Federal Building in Richland. Some specific examples of the Emergency Control Centers located at the Hanford Site over the years include one located in the 703 Building basement, one in the basement of the 3701-D Building that was a self-contained center with pressure-seal doors, and one located within the 6652-L Nike Missile Base Underground Missile Storage Facility where a war board would be assembled to track events in case of a nuclear accident or attack. See the Historic Property Inventory Forms in Appendix B on the Internet for the 3701-D and 6652-L facilities for more detail.

AREAS FOR FURTHER RESEARCH

Security at the Hanford Site has undergone many changes and challenges since the end of the Cold War. Security measures have been evaluated and reassessed as a result of the change in the Hanford Site mission. Security has become more relaxed in certain aspects and yet increased and improved in others. Along with this, the employee view of security sometimes focuses too much on the fact that the Cold War is over, not necessarily realizing that that does not change the security goals. Further research into the security changes and challenges caused by the end of the Cold War and new mission at the Hanford Site would be worthwhile.

Because many of the security measures of the Cold War are still in practice today, numerous sources dealing with security issues at the Hanford Site are still classified. When these documents are declassified, future researchers will be able to give a fuller account of site security during the Cold War than could be developed here. The following U.S. Department of Energy documents detail the transition effort:

- *Security Transition Program Office Progress Report* (Nousen 1994)
- *Security Transition Program Office (STPO): Technology Transfer of the STPO Process, Tools, and Techniques* (Hauth et al. 1994)
- Hanford Vision 2000 Team Security brochures:
  - *Security Transition: Changing the Face of Hanford* (DOE 1994c)
  - *Lessons from Hanford: Managing Change in the DOE Complex* (DOE 1994d)
  - *Hanford Security Transition: Tools for Change* (DOE 1994e)

A collection of unedited, unpublished, narrated video footage exists in the U.S. Department of Energy's Video Production department (currently run by Lockheed Martin Services, Inc.) in the Federal Building, Room 127. This collection includes historic and current footage of security operations, specifically, Tactical and Special Response Team exercises, special security vehicle use (helicopters, fast attack, tanks), patrol officer fitness training and requirements, K-9 Unit training, security control rooms, vehicle searches, check points, and examples and explanations of electronic security devices (x-ray machines, the Nuclear Material Tracking System, motion detectors). This footage, along with a supportive narrative and oral interviews, could be used to create a video history of security at the Hanford Site.

One of the sub-themes of Hanford Site security is the operation of the counter-intelligence organization. Further research into the detailed operations of counter-intelligence at the Hanford Site and in Richland Village would provide a view of an underground security force involved in security-related activities aimed at protecting national security. Although

counter-intelligence operations are not unique to the Hanford Site, details of its operations during the Manhattan Project and Cold War would lend insight into counter-intelligence activities at a plutonium production facility and the relationship with national security.

Classification policies used by the Atomic Energy Commission and later the U.S. Department of Energy shielded both agencies from questions concerning releases of radioactivity, environmental degradation, and environmental health risks to workers and public. Questions concerning whether security practices were legitimate or valid could be a focus for future research.

Specific areas of study concerning the effect of site security on environmental and human health, labor unions, and research might be:

- How did the atmosphere of security during World War II affect what workers learned of the hazards of working at the Hanford Site? How did it influence the ways industrial injuries and diseases were handled in the medical and legal system?
- How did compartmentalization and secrecy affect the work place? How did these conditions impact future environmental and occupational health problems at the facility?
- How did the security and background checks shape community life in areas such as the environment, civil liberties, and civil rights? What issues were not raised at the Hanford Site for security reasons?
- What was the impact of the security system on the development and activities of labor unions? Did security regulations repress unions?
- How did the security system affect scientists and engineers. Did the security system restrict dissent among scientists?